

Chapter 4

Installation Instructions

HOW TO USE THESE INSTRUCTIONS

These instructions guide you through the installation of a Satellite System which includes your DishPro receiver (included with this manual), and one of two kinds of dish antenna systems.

- **DishPro** antenna systems which can be identified by the DishPro logo shown below.



- **Legacy** antenna systems which *do not* have the DishPro logo.

Important: You cannot use DishPro LNBFs and switches (those marked with the DishPro logo) with Legacy switches and LNBFs (those without the DishPro logo). You must install your DISH antenna system with either all DishPro LNBFs and switches or all Legacy LNBFs and switches. If you mix the two, the system will not work.

Note: If you have a Dish antenna system already installed, and the dish has been pointed for the strongest possible signal strength, you can skip this chapter and go directly to *Appendix A* to install the satellite receiver in an existing system.

Note: If you are installing a DishPro receiver into a system with DishPro LNBFs (and/or switches), you can have as much as 200 feet of cable between the LNBF and the receiver. However, you must use only RG-6 coaxial cables rated for 950 to 2150 MHz. Some cables may say "Swept tested for 2150 MHz." If you have any doubt about this, ask your DISH retailer, or look on the container the cable came in. Do not use cable company TV cables or cables from other satellite TV systems not rated for 950-2150 MHz. These other cables may cause signal loss. Do not use existing cables such as RG-59. Also, be sure that any outdoor connections are made using waterproof F-connectors.

Note: If you are installing the DishPro receiver into a system with Legacy LNBFs and/or switches (that do not have a DishPro logo), you can have as much as 100 feet of cable between the LNBF and the receiver. However, you must use only RG-6 cable - do not use existing cables such as RG-59. Also, be sure that any outdoor connections are made using waterproof F-connectors.



Tighten all the coaxial cable connections *only* by hand. If you use a wrench you may over-tighten the connections and damage your equipment. Such damage is *not* covered by the Limited Warranty in the *User Guide* that came with the system.

Tip: Look for the DishPro logo to determine if your system is a DishPro or Legacy (non-DishPro) system. After you determine the type of system you have, use the instructions that apply to that system.

INSTALLING A DISH 500 ANTENNA

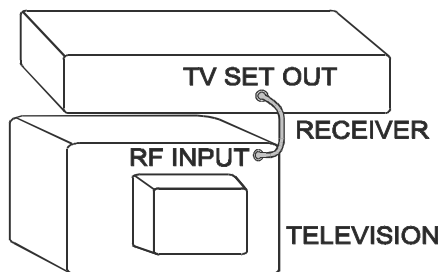
Whether you are installing a DishPro or Legacy system, you need to assemble the satellite dish, mount it, and point it in the general direction of a satellite. To do this, follow these instructions.

FINDING THE SATELLITES

To find the satellites in the sky, you need to know the azimuth (the south, southeast, or southwest direction to the satellites), elevation (the angle up to the satellites), and the skew angles from your location.

Do the following to get these angles:

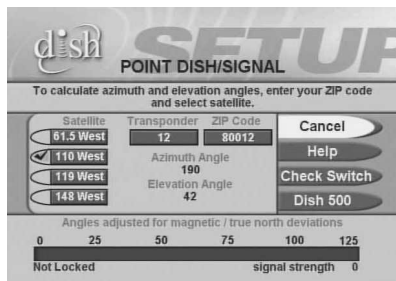
1. Connect the **TV Set Out** port on the receiver's back panel to the television's **RF Tuner Input** using a coaxial cable. Make sure that the TV is tuned to the same channel as the **Channel 3/4 Switch** on the receiver's back panel (for example, if this switch is at "3," the TV must be tuned to Channel 3).



Note: You may choose other connections between your receiver and TV. See page 13 for more information.

2. Make sure that the remote control batteries are fresh, and are installed properly. Press the SAT mode button on the remote to make sure the remote is in SAT mode to control the satellite receiver.
3. Turn ON the television and receiver.
4. Go to the **Point Dish/Signal** menu, by opening the **Main Menu** and pressing 6-1-1 (unless the receiver already displays this menu).

Tip: When you select the Dish 500 option, you will see the Dish 500 angles. Otherwise, the angles for the Dish 300 are displayed.



5. Enter your ZIP code in the **ZIP Code** field.

6. Select the **Dish 500** option.
7. The receiver displays the **Dish 500 Setup** menu. The menu displays the azimuth, elevation, and skew angles. Write down these numbers in the space provided.
8. Select **Cancel** to exit out of this menu and return to the **Point Dish/Signal** menu.

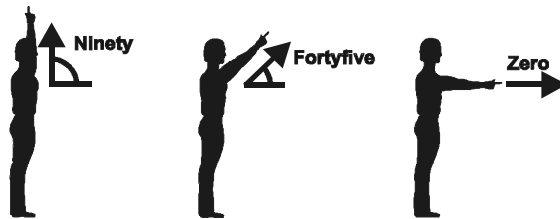
Azimuth: _____

Elevation: _____

Skew: _____

MOUNTING THE DISH

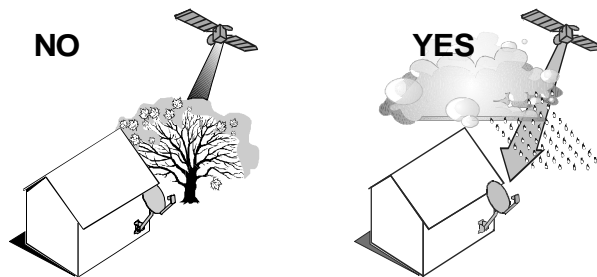
1. With a compass, find the required azimuth angle. Then, use the elevation angle to find out how high the satellites are in the sky from your location. Estimate the angle by comparing what you wrote down and the drawing below.



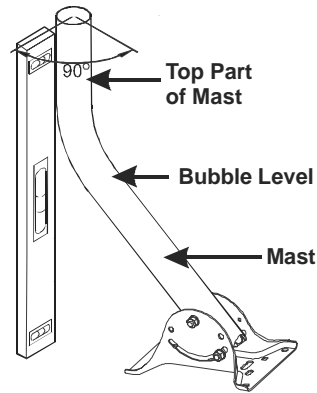
2. Make sure the dish is located so that nothing blocks the line of sight to the satellites. Mount the mast to a solid surface so that the dish antenna cannot move, even during windy condition, or be bumped out of adjustment. Keep in mind that physical and environmental conditions can block your satellite dish's ability to receive a clear satellite signal.

Mount the dish so there are no obstacles between the dish and the satellite. This will help keep the signal strength strong even in bad weather. Obstacles that can block the signal include plant growth, and eaves and overhangs on your house.

Note: Never mount to a tree.

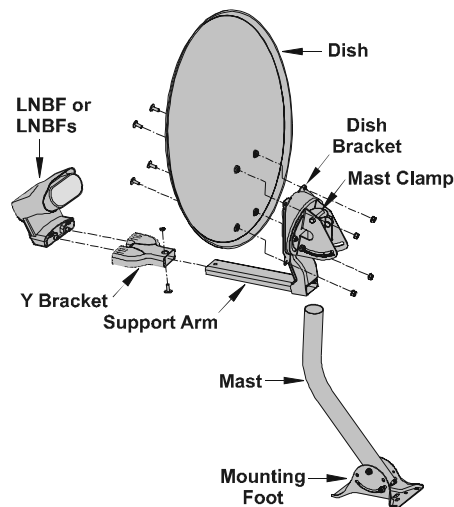


3. Align the top part of the mast so that it is absolutely vertical, as shown below. If the top part of the mast is off vertical by only a few degrees, it will be difficult or maybe even impossible for you to find the satellites. Take at least two readings with a bubble level, on the upper mast, that are 90 degrees apart from one another.



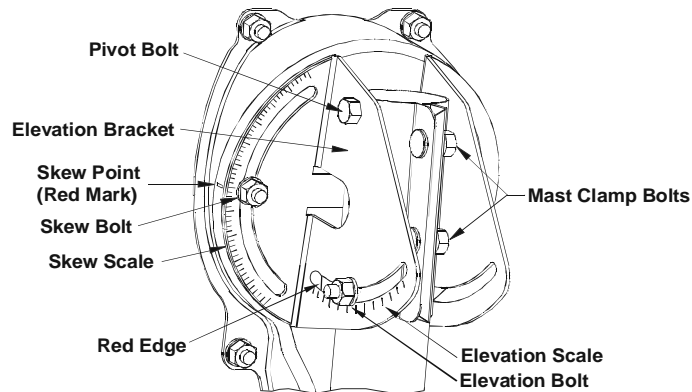
4. Assemble the satellite dish as shown below.

Note: There are steps that require you to run cable through parts of the antenna assembly, so do not connect the LNB(s) or the Y Bracket and do not tighten the mast clamp on the mast until specifically instructed.



Tip: Once the skew angle is set, *do not* try to fine-tune this angle when aiming the dish.

5. Loosen both skew bolts and set the skew by rotating the dish mounting bracket to align the red mark with the required angle on the skew scale which you wrote down on page 65. Tighten the skew bolts securely to keep the dish from rotating.



6. Set the elevation by tilting the dish mounting bracket to align the red edge with the required angle on the elevation scale. Tighten the elevation bolts, but *do not* tighten the pivot bolt at this time.

INSTALLING A DISHPro DISH 500 SYSTEM

The following instructions are for installing a DishPro receiver in a system with a DishPro Twin LNB. If you are installing a multi-dish system, you will need to follow these instructions and then the instructions that begin on page 72. If you are installing a DISH 500 with Legacy LNBs (with no DishPro logo), go to *Installing a DISH 500 Legacy System* beginning on page 79.

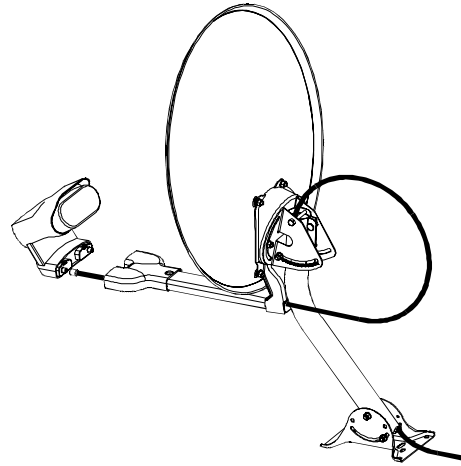


Important: You cannot use DishPro LNBs and switches (those marked with the DishPro logo) with Legacy switches and LNBs (those without the DishPro logo). You must install your DISH antenna system with either all DishPro LNBs and switches or all Legacy LNBs and switches. If you mix the two, the system will not work.

Note: If you are installing a DishPro receiver into a system with DishPro LNBs (and/or switches), you can have as much as 200 feet of cable between the LNB and the receiver. However, you must use only RG-6 coaxial cables rated for 950 to 2150 MHz. Some cables may say "Swept tested for 2150 MHz." If you have any doubt about this, ask your DISH retailer, or look on the container the cable came in. Do not use cable company TV cables or cables from other satellite TV systems not rated for 950-2150 MHz. These other cables may cause signal loss. Do not use existing cables such as RG-59. Also, be sure that any outdoor connections are made using waterproof F-connectors.

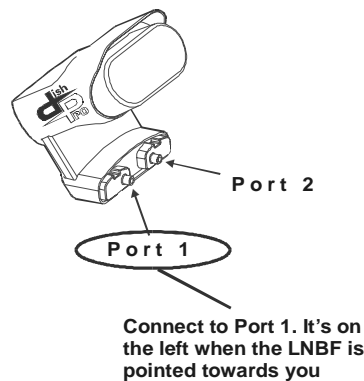
Tip: The DishPro Twin LNB has the DishPro Logo on it.

1. Thread the RG-6 coaxial cable through the mast (optional), support arm and the Y-bracket. This cable should be long enough to run from your receiver to your LNBF. See *Grounding the System* on page 95 for detailed cable installation instructions.

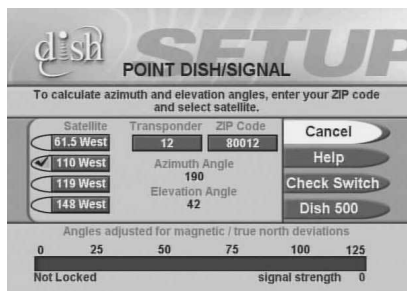


2. Connect the RG-6 cable from the DishPro **Satellite In** connection on the back of the receiver *directly to port 1* of the DishPro Twin LNBF, as shown below.

Important: Be sure there are no multi-dish switches between the LNBF and the receiver.



3. Attach the LNBF to the Y-bracket, using the two LNBF screws.
4. Slide the dish assembly down onto the mast if not already installed. Make sure the pivot bolt rests on the top of the mast. Turn the dish assembly so that it points in the general direction of the satellites, using the azimuth angle from page 65.
5. You should see the **Point Dish/Signal** menu. If not, open the **Main Menu**, select **System Setup**, then **Installation**, then **Point Dish/Signal** or press 6-1-1 on the remote.



6. Select **Check Switch**. The **Check Switch** screen will open.
7. **Select Check**. The receiver shows you a message that it is checking the switches.
8. When the check switch procedure finishes, you should see an installation summary screen similar to the one shown on the following page. In the **Satellite** line, you should see the word “Conn,” twice. In the **Device** line, you will see the word “Twin” twice. In the **LNBF** line, you should see “twin-1.” This indicates that your receiver has confirmed the connection with Port 1 on your DishPro Twin LNBF is working. If your **Installation Summary** screen matches this, you can go directly to step #10. If not, do one of the following:
 - If “Xs” appear in the **Satellite** line, recheck and tighten all the connections in your system, and then select Retest to run **Check Switch** again.
 - If “Twin-2” is in the **LNBF** line, your receiver is connected to Port 2 of the DishPro Twin LNBF. Disconnect the cable and reconnect it to Port 1 of the LNBF, and then select **Retest** to run **Check Switch** again.
 - If you happened to pick up a satellite at this point, you may see “110” or “119” in the Satellite line.
 - If “119” shows under **Dish Input 1**, then go to step #10. If “119” shows under **Dish Input 2**, move the dish about 9 degrees to the east, and then select **Retest** to run **Check Switch** again.
 - If “110” shows under **Dish Input 2**, then go to Step #10. If “110” shows under **Dish Input 1**, move your dish about 9 degrees to the west, and then select **Retest** to run **Check Switch** again.

Tip: If, by accident, a satellite is detected through the wrong side of the LNBF, the dish needs to be turned to line up the satellite signal to the correct side of the LNBF.

Tip: Have one person aim the dish while another watches the signal strength or listens to the signal tone.

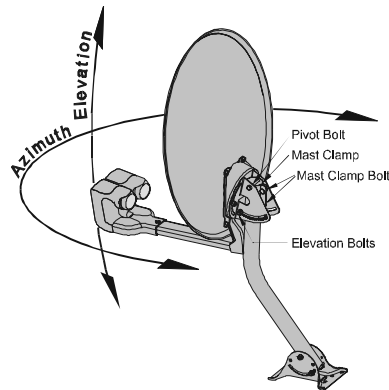
Tip: Don't stand in front of the dish while you aim it, because your body will block the satellite signal. After you adjust the aim, let go of the dish so that it can settle back in place by itself.



9. Select **OK** to return to the **Point Dish/Signal** screen. Make sure the check mark is next to **119 West**. If not, move the highlight to **119 West** and press Select. Notice the signal strength bar. This is used to help you aim the dish by showing the strength of the signal you are receiving. Look at the signal strength bar while you aim the dish.

Important: Do not change the skew setting.

10. Turn the dish back and forth *very slowly*, until the signal strength bar turns *green*. This shows you've found the signal.



Note: If you cannot find the signal, turn the dish back to the first azimuth angle. Then, loosen both elevation bolts *just enough* so you can tilt the dish. Tilt the dish up by two degrees, and then tighten both bolts. Now, turn the dish back and forth again. *If you still can't find the signal*, tilt the dish up again *very slightly* and turn the dish back and forth until you find the signal.

11. When the signal strength bar is *green*, turn the dish back and forth *just a little*, to where the signal strength bar shows the strongest signal. When you find the strongest signal, tighten both mast clamp bolts. Then loosen both elevation bolts, *just enough* so you can tilt the dish. Tilt the dish up and down *just a little*, to where the signal strength bar shows the strongest signal. **Do not adjust the skew.** When you find the strongest signal, tighten all bolts in the dish assembly so the dish cannot be moved.

12. Verify reception from both satellites. Select the **Check Switch** option. When the **Check Switch** menu opens, select **Check**. The receiver shows you a message that it is checking the switches. When the procedure is finished, you will see an **Installation Summary** screen similar to the one shown below. Confirm that you have **signals from both the 110 West and 119 West Satellites**, that you see “All” twice in the **Transponder** line, and that the message “Satellite reception verified” is displayed. Select **Cancel** to exit this menu.



13. If you do not see “110,” under **Dish Input 2**:
 - Make sure the skew angle you wrote down on page 65 is exactly the same as the skew angle you set in step #5 on page 65. If it is not, reset the skew angle as described on page 66. After you reset the skew angle, go back to page 70, and start over from step #10.
 - If “119” is shown under **Dish Input 2**, move the dish approximately 9° to the east and restart the procedure at step #6.
14. Look at the **Point Dish/Signal** menu. If you have good signal strength with the check mark in **119 West**, move the check mark to **110 West**. If you have good signal strength on **110 West**, go to step #15. If you do not have good signal strength with the check mark in **110 West**, repeat Step #12, and fine-tune the dish but with the check mark in **110 West** instead of **119 West**. While the **110 West** and **119 West** signals will not be equal, you should be able to fine-tune the dish until you have the strongest possible signal from both satellites. When you have finished this, select **Check Switch**. When the **Check Switch** menu opens, select **Check** to run **Check Switch** again.
15. Select Cancel to exit the **Point Dish/Signal** menu. An Attention screen will open asking the mounting and positioning of your dish is complete with a “Locked” indication in the Point Dish/Signals screen. If the answer is yes, select **Yes**.

If the answer is No, you will need to repoint your dish following the preceding steps until the mounting and positioning is complete and you do have the “Locked” indication.
16. After you select **Yes**, the receiver will begin taking a software upgrade. You will see a **Warning** that “Vital program information will now be downloaded into your receiver.” You will also see a status bar showing the progress of this upgrade.

17. When the software upgrade is complete, you will see a message that your receiver's memory is being upgraded.

While this message is displaying, the green power light on the receiver's front panel will blink. Do not disturb the receiver while the green light is blinking.

If you will be installing a multi-dish system, follow the instructions that begin below. If not, skip to the section that begins on page 94 titled *Grounding the System* for instructions on how to ground your system.

INSTALLING A MULTIPLE DISH DISHPRO SYSTEM

Important: You cannot use DishPro LNBFs and switches (those marked with the DishPro logo) together with Legacy switches and LNBFs (those without the DishPro logo). You must install your DISH antenna system with either all DishPro LNBFs and switches or all Legacy LNBFs and switches. *If you mix the two, the system will not work.*

Note: If you are installing a DishPro receiver into a system with DishPro LNBFs (and/or switches), you can have as much as 200 feet of cable between the LNBF and the receiver. However, you must use only RG-6 coaxial cables rated for 950 to 2150 MHz. Some cables may say "Swept tested for 2150 MHz." If you have any doubt about this, ask your Dish retailer, or look on the container the cable came in. Do not use cable company TV cables or cables from other satellite TV systems not rated for 950-2150 MHz. These other cables may cause signal loss. Do not use existing cables such as RG-59. Also, be sure that any outdoor connections are made using waterproof F-connectors.

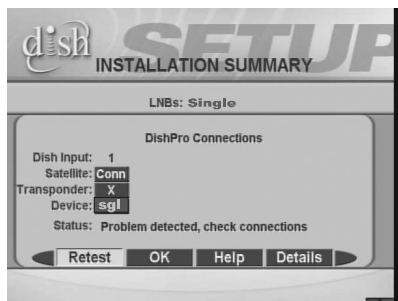
Once you have installed the DISH 500 with DishPro LNBFs (using the preceding instructions), you can now install a DISH 300 with a single DishPro LNBF as follows:

1. Turn on the television and the receiver if they are not already on. You should see the **Point Dish/Signal** screen. If not, open the **Main Menu** and press 6-1-1 on the remote.
2. Make sure there is a check mark next to the satellite your dish will be pointing at. If there is not, use the Up and Down arrows on the remote to move the highlight to the box next to the correct satellite, and then press select on the remote.
3. Enter your Zip code to get the necessary azimuth and elevation. Write these down.
4. Connect an RG-6 cable from the **Satellite In** port on the DishPro receiver's back panel directly to the single DishPro LNBF on the DISH 300. Make sure there are no multi-dish switches between the LNBF and the DishPro receiver.
5. Select **Check Switch** from the **Point Dish/Signal** menu. When the **Check Switch** screen opens, select **Check**.

Azimuth: _____

Elevation: _____

6. When Check Switch is complete, you will see an **Installation Summary** screen similar to the one shown below.



The **Installation Summary** should contain the following information to show your receiver is connected to the DishPro Single LNBF:

- **LNBFs** - Single
- **Dish Input** - 1
- **Satellite** - Conn

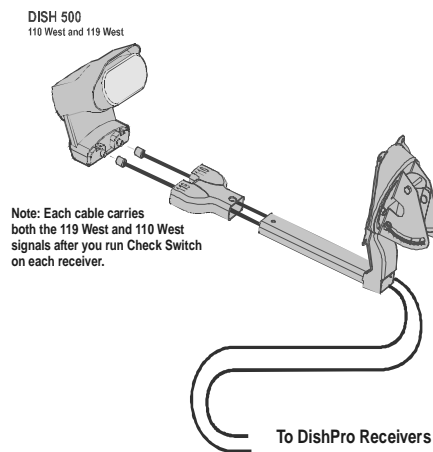
If your screen matches this description, go to step #8. If not, do one of the following:

- If “Xs” appear in the Satellite line, check all connections and then select **Retest** to run **Check Switch** again.
 - If, by chance, the number for the satellite you want to point at appears on the Satellite line, continue on to the next step.
7. Select **OK** to exit back to the **Point Dish/Signal** menu.
8. Point the dish for the strongest possible signal, following the instructions that came with it.
9. Connect any switches in your system, using the instructions that came with the switch(es) and the DishPro wiring diagrams starting on page 74.
10. Select **Check Switch** from the **Point Dish/Signal** menu. When the **Check Switch** menu opens, select **Check**. When the procedure completes, you will see the **Installation Summary** screen again. This time you should have confirmation for all satellites within line-of-sight of your dish(es). You should also see that the switch(es) in your system have been correctly identified. Refer to the DishPro wiring diagrams for examples of installation summary screens.
11. Select **OK** to exit this menu, and then **Cancel** to exit the **Point Dish/Signal** screen.

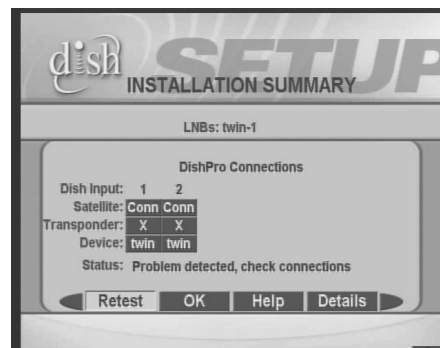
DISHPRO WIRING DIAGRAMS

DISH 500, ONE DISHPRO TWIN LNBF, TWO DISHPRO RECEIVERS

WARNING! This diagram leaves out grounding for clarity. Make sure you ground the system in accordance with the *National Electrical Code* (NEC) and all local electrical codes. See *Grounding the System* on page 94 for more information.

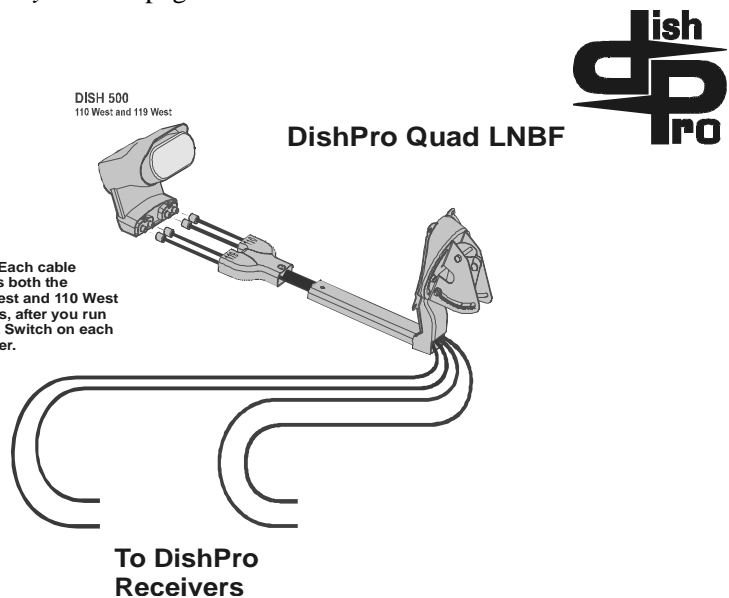


When you set up your system following this diagram and run **Check Switch**, the **Installation Summary** screen should look similar to the one shown below.

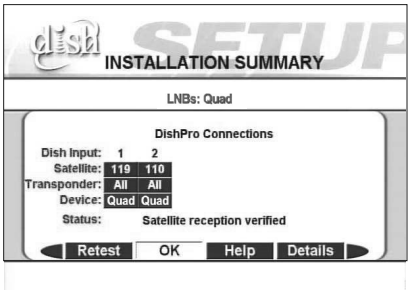


DISH 500, ONE DISHPRO QUAD LNBF, FOUR DISHPRO RECEIVERS

WARNING! This diagram leaves out grounding for clarity. Make sure you ground the system in accordance with the *National Electrical Code* (NEC) and all local electrical codes. See *Grounding the System* on page 94 for more information.

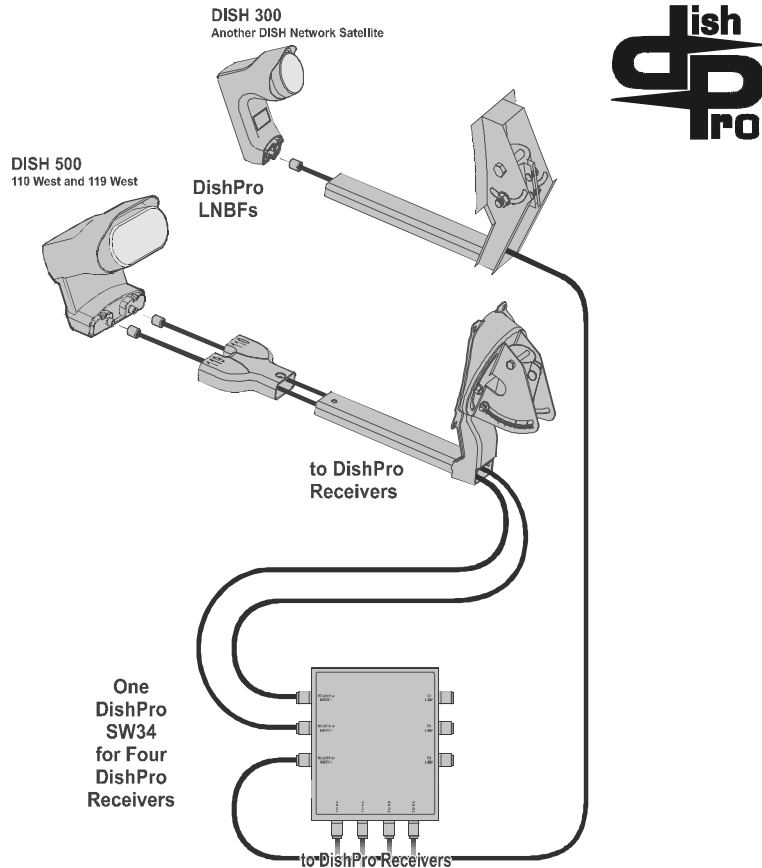


When you set up your system following this diagram and run **Check Switch**, the **Installation Summary** screen should look similar to the one shown below.



DISH 500 WITH A DISHPRO TWIN LNB, ONE DISH300 WITH A DISHPRO SINGLE LNB, ONE DP34 SWITCH, FOUR DISHPRO RECEIVERS (ALL DISHPRO)

WARNING! This diagram leaves out grounding for clarity. Make sure you ground the system in accordance with the *National Electrical Code* (NEC) and all local electrical codes. See *Grounding the System* on page 94 for more information.

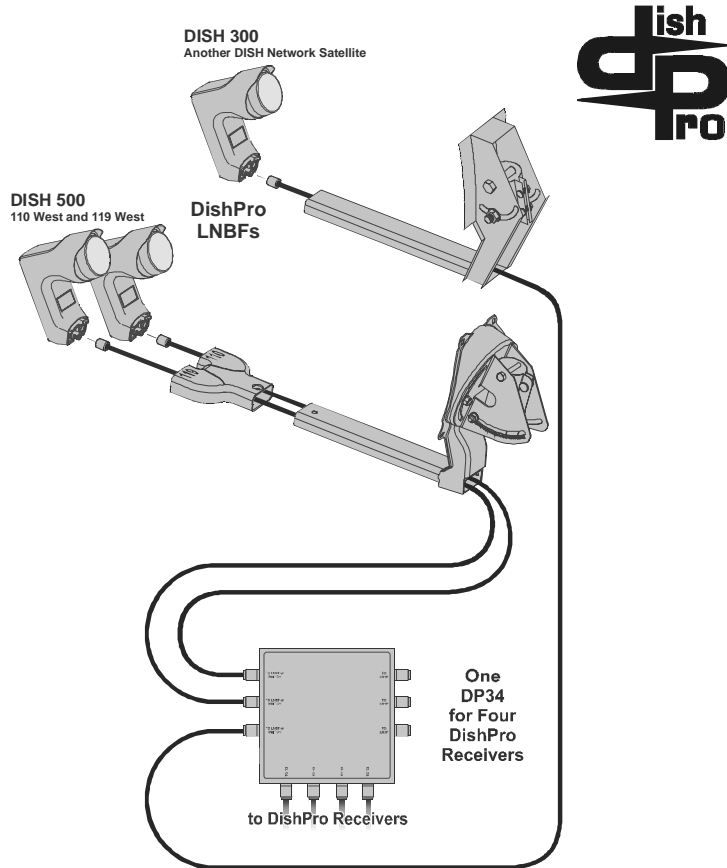


When you set up your system following this diagram and run **Check Switch**, the **Installation Summary** screen should look similar to the one shown below.

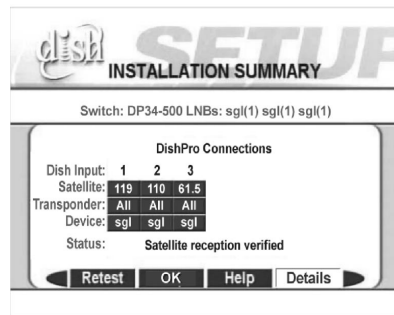


DISH 500, DISH 300, THREE SINGLE-OUTPUT DISHPRO LNBFs, ONE DP34 SWITCH, FOUR DISHPRO RECEIVERS (ALL DISHPRO)

WARNING! This diagram leaves out grounding for clarity. Make sure you ground the system in accordance with the *National Electrical Code* (NEC) and all local electrical codes. See *Grounding the System* on page 94 for more information

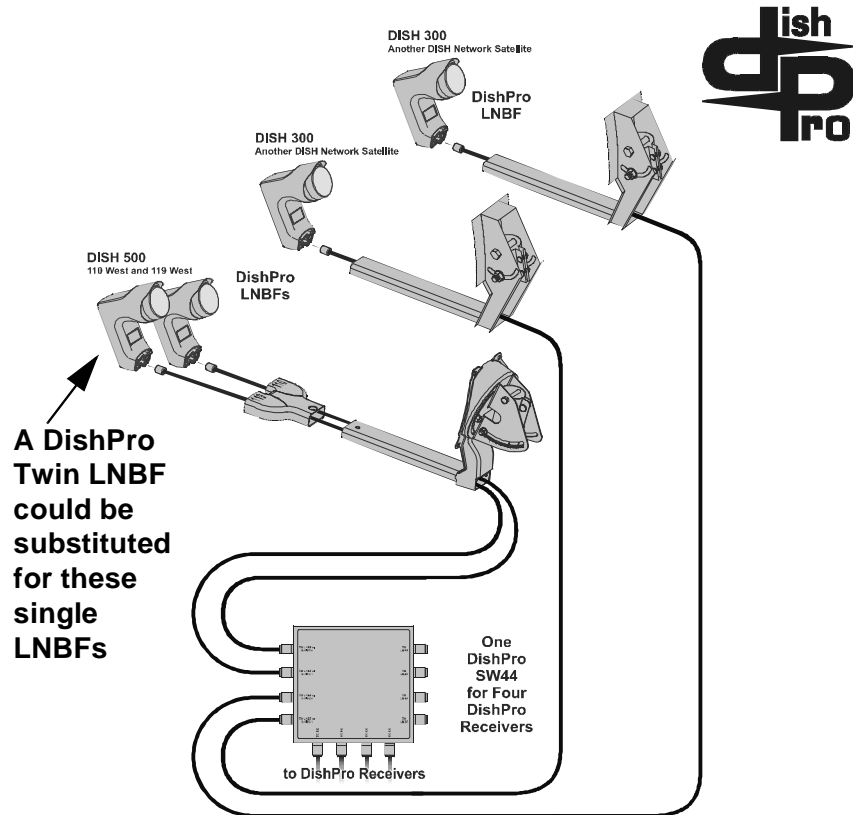


When you set up your system following this diagram and run **Check Switch**, the **Installation Summary** screen should look similar to the one shown below.

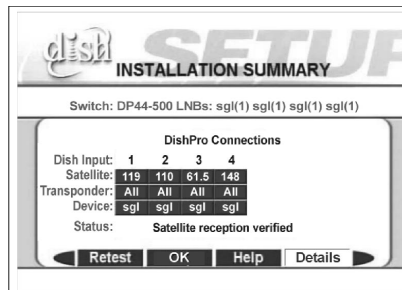


THREE DISHES, FOUR SINGLE-OUTPUT DISHPRO LNBFs, ONE DP44 SWITCH, FOUR DISHPRO RECEIVERS (ALL DISHPRO)

WARNING! This diagram leaves out grounding for clarity. Make sure you ground the system in accordance with the *National Electrical Code (NEC)* and all local electrical codes. See *Grounding the System* on page 94 for more information



When you set up your system following this diagram and run **Check Switch**, the **Installation Summary** screen should look similar to the one shown below.



INSTALLING A LEGACY DISH 500 SYSTEM

If the LNBFs in your system do not have the DishPro logo, you are installing a Legacy system.

- **DishPro** antenna systems which can be identified by the DishPro logo shown below.



- **Legacy** antenna systems which *do not* have the DishPro logo.

Important: You cannot use DishPro LNBFs and switches (those marked with the DishPro logo) with Legacy switches and LNBFs (those without the DishPro logo). You must install your DISH antenna system with either all DishPro LNBFs and switches or all Legacy LNBFs and switches. If you mix the two, the system will not work.

Note: If you have a Dish antenna system already installed, and the dish has been pointed for the strongest possible signal strength, you can skip this chapter and go directly to *Appendix A* to install the satellite receiver in an existing system.

Note: If you are installing a Legacy system with two single or dual LNBFs, follow the instructions that begin below. If you will be installing a Legacy system with a Twin LNBF, skip the following section and go to page 82.

Note: If you are installing a multi-dish system, follow either these instructions or the instructions for installing a system with a Twin LNBF, and then follow the instructions that begin on page 86 to complete your system.

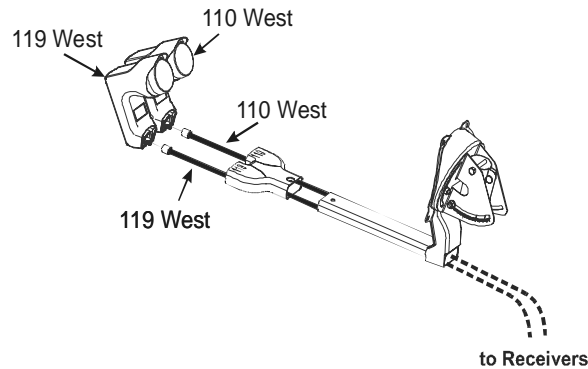
INSTALLING A LEGACY DISH 500 SYSTEM WITH TWO SINGLE OR DUAL LNBFs

Note: If you are installing a Legacy LNBF (that does not have a DishPro logo), you can have up to 100 feet of cable between the satellite dish's LNBF connectors and the receiver, if you use only RG-6 cable. Also, be sure that any outdoor connections are made using waterproof F-connectors.

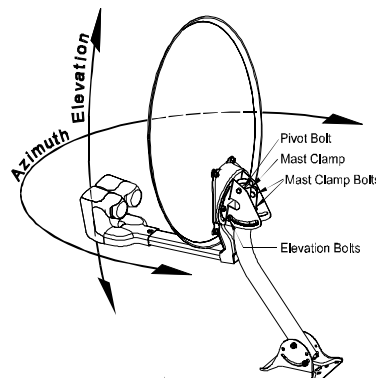
1. Once you have the dish mounted by completing all the steps in the section titled *Mounting the Dish*, label both ends of one coaxial cable "119", and both ends of the other coaxial cable "110." These cables need to be long enough to reach from the receiver to the LNBF. If you are installing dual LNBFs and want to support two receivers or multiple dishes (see the *Alternate Legacy Wiring Diagrams* on page 88), you will also need to thread two additional cables. If you do, make sure you also label one cable "119" on both ends, and the other "110" on both ends. See the section *Grounding the Dish* on page 94 for detailed cable installation instructions.

Tip: Look for the DishPro logo to determine if your system is a DishPro or Legacy (non-DishPro) system. After you determine the type of system you have, use the instructions that apply to that system.

2. Thread both coaxial cables through the mast (optional) support arm and the Y-bracket. Make sure the cable(s) labeled “119” are threaded through the 119 side and the “110” cable(s) are threaded through the “110” side as shown.



3. Attach the Y-bracket using the Y-bracket screw. Connect the “119” cable(s) to one LNB and the “110” cable(s) to the other LNB. Attach the LNBs to the Y-bracket using the two LNB screws.
4. Slide the dish assembly down on the mast if not already installed. Make sure the pivot bolt rests on the top of the mast. Turn the dish assembly so that it points in the general direction of the satellites, using the azimuth angle from page 65.
5. Connect the RG-6 coaxial cable from the “119” LNB *directly* to the **Satellite In** connection on the receiver’s back panel. You may temporarily need to use a barrel connector in place of where your switch will go later to complete this step. Do *not* connect the multi-dish switch at this time.
6. Turn ON the television and the receiver. The **Point Dish/Signal** menu should be displayed. If not, open the **Main Menu** and press 6-1-1 on the remote.
7. Make sure the check mark is next to **119 West**. If it is not, move the highlight to **119 West** and press Select on the remote control.
8. Turn the dish back and forth *very slowly*, until the signal strength bar turns *green*. This shows that you have found the signal.



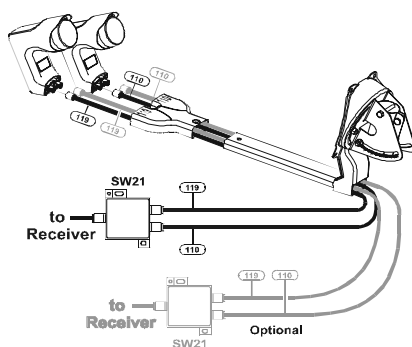
Note: If you cannot find the signal, turn the dish back to the original azimuth setting. Then, loosen both elevation bolts *just enough* to be able to tilt the dish. Tilt the dish up by two degrees, and then tighten both bolts. Now, try turning the dish back and forth again. Repeat these steps, raising and lowering the elevation, until you find the satellite signal.

9. Once you have a signal, turn the dish assembly back and forth very slightly until the signal strength bar displays the strongest possible signal strength. Tighten the mast clamp bolts. Then, loosen the elevation bolts and adjust the elevation of the dish up and down slightly until the signal strength bar displays a strong signal. Do not adjust skew. Tighten all the bolts in the dish assembly so that the dish cannot be moved.
10. When you have the strongest possible signal, press the **Cancel** button on the remote to exit the **Point Dish/Signal** menu. The receiver displays an **Attention** message asking whether the installation is complete. If the answer is yes, select the **Yes** option. The receiver will begin taking a software upgrade. You will see a **Warning** that “Vital program information will now be downloaded into your receiver.” You will also see a status bar showing the progress of this upgrade.
11. Once the software upgrade is complete, you will see a message that your receiver’s memory is being upgraded.

While this message is displaying, the green power light on the receiver’s front panel will blink. Do not disturb the receiver while the green light is blinking.

This message may disappear, your screen may go blank for a few minutes, and the green light may continue to blink. This is normal and does not indicate a problem with the receiver.

12. Connect the “119” cable from the LNBF to the **Dish 1** connection on the multi-dish switch. Connect the “110” cable from the LNBF to the **Dish 2** connection on the multi-dish switch. Connect a cable from the multi-dish switch to the **Satellite In** port on the receiver’s back panel.



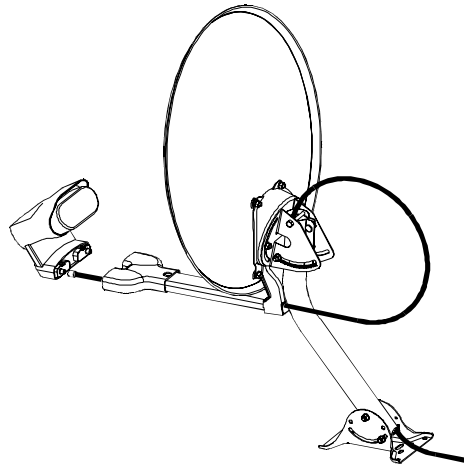
**Two dual LNBFs and two
SW21 multi-dish switches
(second switch optional)**

13. Open the **Main Menu** and press 6-1-1 on the remote to again open the **Point Dish/Signal** menu. Select **Check Switch** and then select **Check**. The receiver will check your multi-switch installation. After the system checks the installation, you will see the **Installation Summary** screen. Make sure that the correct switch is displayed and that you have “Satellite reception verified” from both the **110 West** and **119 West** satellites.
14. At the **Point Dish/Signal** menu, select the **110 West** option. Verify that you have a green signal strength bar with a locked signal.
 - If the signal from the **110 West** satellite is weak and you do not see a green signal strength bar, repeat steps #8 and #9 to fine-tune the dish until you have the best attainable signal strength for both the **119 West** and **110 West** satellites.
 - If there is no signal strength on **110 West**, check your connections and select **Check Switch** again. If there is still no signal strength, check to make sure your skew angle is correct, and start over, beginning with step #7 until you have a good signal from both the **110 West** and **119 West** satellites.
15. Connect any other receivers in the system, verify signal reception from the **Point Dish** menu. Turn the receivers OFF so they can take the software upgrade, and then run **Check Switch** to verify signal reception from all satellites.

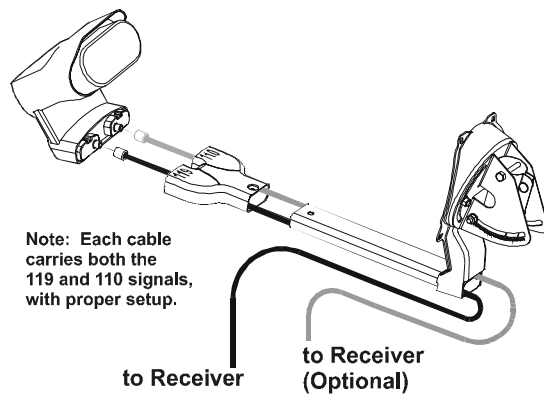
INSTALLING A LEGACY SYSTEM WITH A TWIN LNBF

Note: If you are installing a Legacy (non-DishPro) LNBF (that does not have a DishPro logo), *you can have up to 100 feet* of cable between the satellite dish’s LNBF connectors and the receiver, if you use only RG-6 cables. Also, be sure that any outdoor connections are made using waterproof F-connectors.

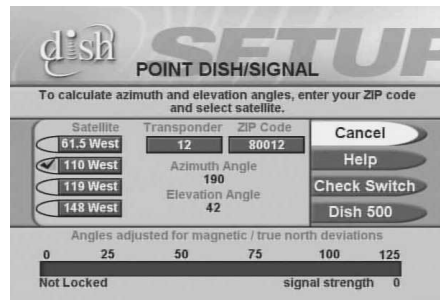
1. After you mount the dish, in accordance with the instructions *Installing a DISH 500 Antenna* that begin on page 63, thread the coaxial cable through the support arm, mast (optional), and the Y-bracket. If you are planning on adding a second satellite receiver, thread another cable through the support arm and the Y-bracket. The cable should be long enough to reach from the LNBF on the satellite dish to the receiver (refer to *Grounding the System* beginning on page 94 or detailed cabling instructions).



2. Attach the Y-bracket, using the Y-bracket screw.
3. Connect the RG-6 cable from the **Satellite In** connection on the back of the receiver *directly to the* Twin LNBF, as shown below. Be sure there are no multi-dish switches between the LNBF and the receiver.

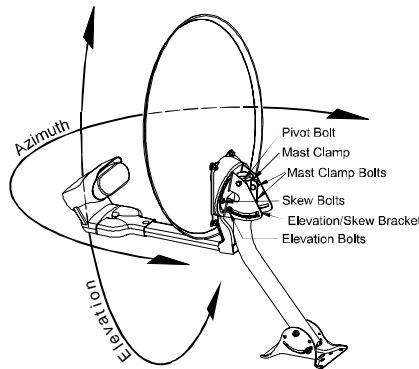


4. Attach the LNBF to the Y-bracket using the two LNBF screws.
5. Slide the dish assembly down on the mast if not already installed. Make sure the pivot bolt rests on the top of the mast. Turn the dish assembly so that it points in the general direction of the satellite, using the azimuth angle from page 65.
6. Turn ON the television and the receiver. The **Point Dish/Signal** menu should be displayed.



If not, open the **Main Menu** and press 6-1-1 on the remote. Select the **119 West** option if it is not already selected.

7. Turn the dish back and forth *very slowly*, until the signal strength bar turns *green*. This shows that you have found the signal.



Note: If you cannot find the signal, turn the dish back to the original azimuth setting. Then, loosen both elevation bolts *just enough* to be able to tilt the dish. Tilt the dish up by two degrees, and then tighten both bolts. Now, try turning the dish back and forth again. Repeat these steps, raising and lowering the elevation, until you find the satellite signal.

8. When you have a signal, turn the dish assembly back and forth very slightly until the signal strength bar displays the strongest possible signal strength. Tighten the mast clamp bolts. Then, loosen the elevation bolts and adjust the elevation of the dish up and down slightly until the signal strength bar displays a strong signal. *Do not adjust skew*. Tighten all the bolts in the dish assembly so that the dish cannot be moved.
9. When you have the strongest possible signal, press the CANCEL button on the remote to exit the **Point Dish/Signal** menu. The receiver displays an **Attention** message asking whether the installation is complete. If the answer is yes, select the **Yes** option. The receiver will begin taking a software upgrade. You will see a **Warning** that “Vital program information will now be downloaded into your receiver.” You will also see a status bar showing the progress of this upgrade.

If the answer is no, you will need to repoint your dish following the preceding steps until the mounting and positioning is complete and you do have the “locked” indication.

10. When the software upgrade is complete, you will see a message that your receiver’s memory is being upgraded.

While this message is displaying, the green power light on the receiver’s front panel will blink. Do not disturb the receiver while the green light is blinking.
11. When the software upgrade finishes, you need to return to the **Point Dish/Signal** screen. To do this, open the **Main Menu** and press 6-1-1 on the remote.
12. Select **Check Switch** from the **Point Dish/Signal** menu. When the **Check Switch** menu opens, select **Check**. The receiver will check your satellite system. After the system checks your installation, an **Installation Summary** screen will appear. Verify that the 500 Twin is displayed, and the 119 and 110 satellites are verified. Select **OK**.
13. At the **Point Dish/Signal** menu, select the **110 West** option and verify that you have a green signal strength bar with a locked signal.
 - If there is no signal strength on **110 West**, check your connections and select **Check Switch** again. If there is still no signal, confirm that your skew angle is correct, and start over with step #6.
 - If the signal from the **110 West** satellite is weak and you do not see a green signal strength bar, repeat steps #5, #7, and #8 to fine-tune the dish until you have the best attainable signal strength for both the **119 West** and **110 West** satellites.
14. Connect any other receivers in the system. Verify signal reception from the **Point Dish/Signal** menu, allow the receivers to take a software upgrade from the satellite, and then run **Check Switch** to verify the signal from all satellites.

If you will be installing a multi-dish system, follow the instructions that begin below. If not, you can skip to the section that begins on page 94 titled *Grounding the System*.

Azimuth: _____

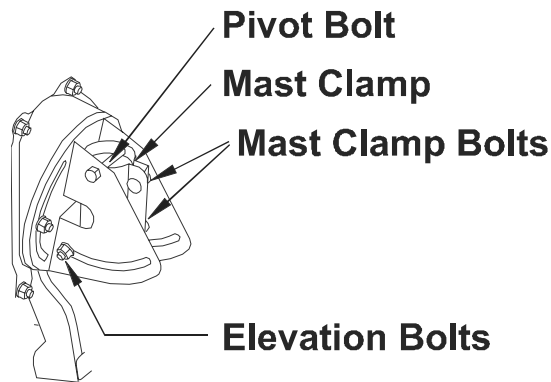
Elevation: _____

INSTALLING A LEGACY MULTIPLE DISH SYSTEM

When you have installed the DISH 500 with its Legacy LNBF(s), you can add a DISH 300 with a Legacy LNBF to your system as follows (please see the section titled *Alternate Legacy Wiring Diagrams* for more information on wiring the system).

1. Turn on the television and receiver. You should see the **Point Dish/Signal** menu. If you do not, open the **Main Menu** and press 6-1-1 on the remote.
2. On the **Point Dish and Signal Strength** menu, use the Up/Down/Left/Right arrow buttons to move the highlight to the **Satellite** field and choose the satellite at which you would like to aim, for example **61.5**.
3. Enter your zip code in the **ZIP Code** field.
4. The receiver displays the azimuth and elevation angles on the menu. Write down these numbers as you will use them later in this procedure.
5. Using these azimuth, and elevation angles, find a location for the satellite dish. Then, use the elevation angle to find out how high the satellite is in the sky from your location. Use the azimuth angle to find out where the satellite is along the horizon (South, Southwest). Make sure nothing blocks the line of sight to the satellites.
6. Mount the satellite dish following the instructions that came with it. Connect the RG-6 cable directly from the LNBF to the **Satellite In** port on the receiver's back panel. Make sure there are no multi-dish switches between the LNBF and the receiver.
7. When the dish is mounted, you should still be on the **Point Dish/Signal** menu. If not, open the **Main Menu** and press 6-1-1 on the remote.
8. Look at the **Signal Strength** bar. Turn the dish back and forth *very slowly*, until the signal strength bar turns *green*. This shows that you have found the signal.

Note: If you cannot find the signal, turn the dish back to the original azimuth setting. Then, loosen both elevation bolts *just enough* to be able to tilt the dish.



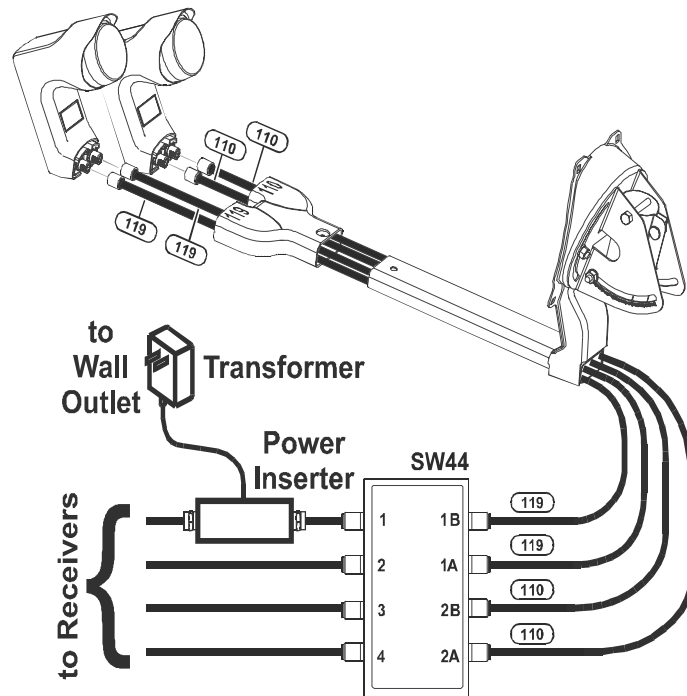
9. Tilt the dish up by two degrees, and then tighten both bolts. Now, try turning the dish back and forth again. Repeat these steps, raising and lowering the elevation, until you find the satellite signal.
10. When you have a signal, turn the dish assembly back and forth very slightly until the signal strength bar displays the strongest possible signal strength. Tighten the mast clamp bolts. Then, loosen the elevation bolts and adjust the elevation of the dish up and down slightly until the signal strength bar displays a strong signal. Tighten all the bolts in the dish assembly so that the dish cannot be moved.
11. Mark the final locations on the mast and mounting bracket with a permanent marker. This assists you later if you have to realign the dish because of movement due to wind or weather. Do not scratch the painted surfaces to mark them. This will cause rusting.
12. Connect the LNBFs to the switch(es) using the instructions that came with your switches. (See the Alternate Wiring diagrams on page 88 for more information.)
13. Connect the switch(es) to the receiver using the instructions that came with your switches.
14. Run **Check Switch** from the **Point Dish/Signal** menu. Verify that you have signals from all the satellites in your system and that the correct switches have been identified.

ALTERNATE LEGACY WIRING DIAGRAMS

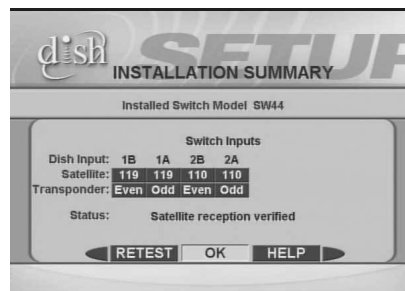
DISH 500, TWO DUAL-OUTPUT LNBFs AND ONE SW44 MULTI-DISH SWITCH, FOUR RECEIVERS



This diagram omits grounding for clarity. Make sure to ground the system in accordance with the *National Electrical Code* (NEC) and all local electrical codes. See *Grounding the System* on page 94 for guidance on grounding.



When you set up your system following this diagram and run **Check Switch**, the **Installation Summary** screen should look similar to the one shown below.

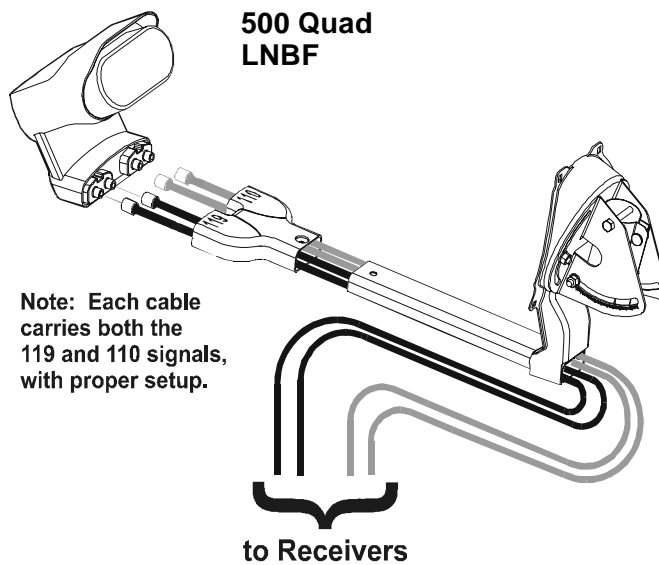


DISH 500, ONE QUAD LNBF, FOUR RECEIVERS

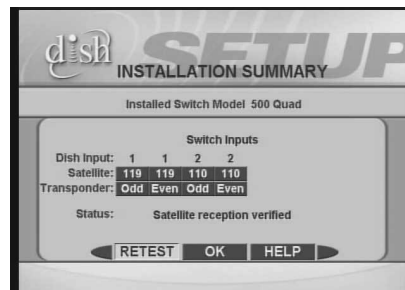


This diagram omits grounding for clarity. Make sure to ground the system in accordance with the *National Electrical Code* (NEC) and all local electrical codes. See *Grounding the System* on page 94 for guidance on grounding.

Dish 500 110 and 119



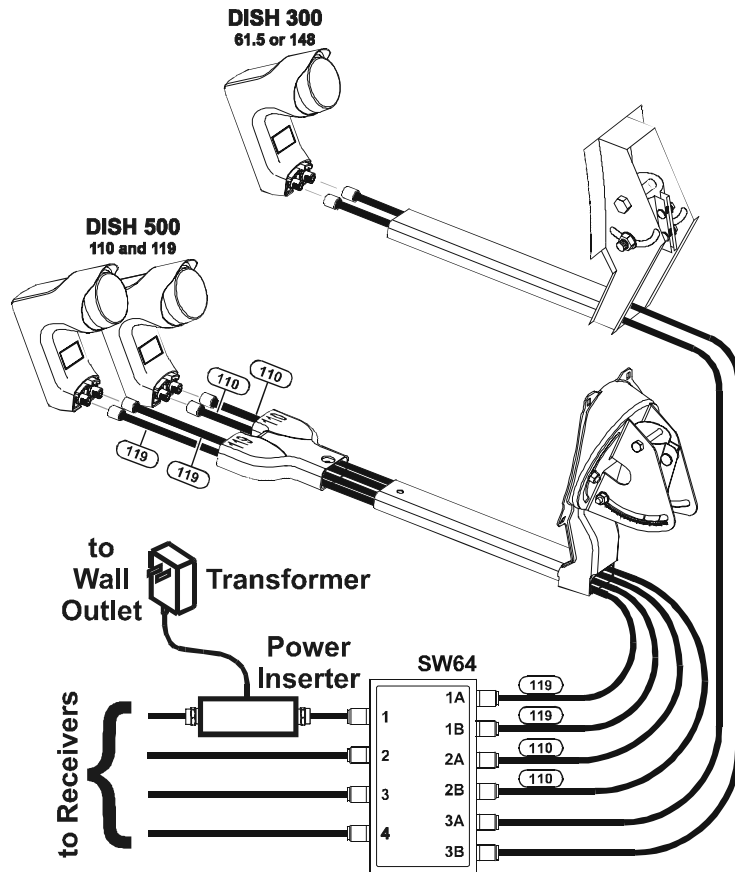
When you set up your system following this diagram and run **Check Switch**, the **Installation Summary** screen should look similar to the one shown below.



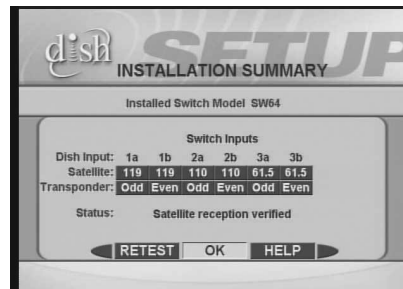
TWO DISHES, THREE DUAL-OUTPUT LNBFs, ONE SW64 MULTI-DISH SWITCH, FOUR RECEIVERS



This diagram omits grounding for clarity. Make sure to ground the system in accordance with the *National Electrical Code* (NEC) and all local electrical codes. See *Grounding the System* on page 94 for guidance on grounding.



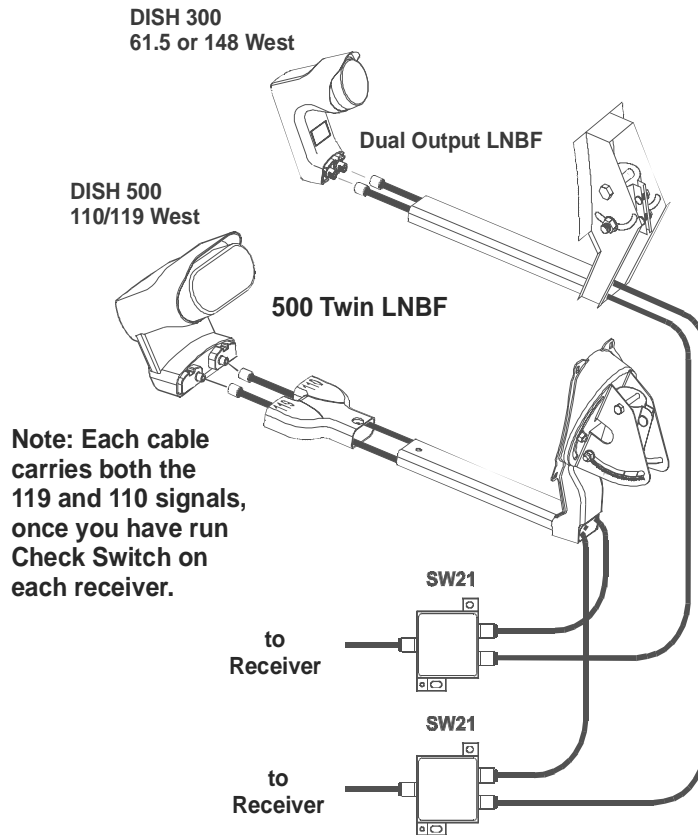
When you set up your system following this diagram and run **Check Switch**, the **Installation Summary** screen should look similar to the one shown below.



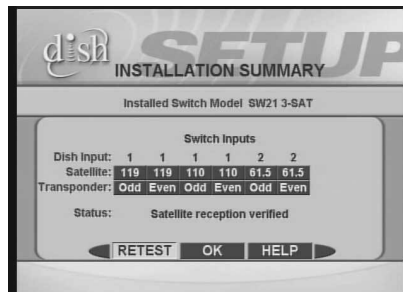
TWO DISHES, ONE 500 TWIN, ONE DUAL LNBF, TWO RECEIVERS, TWO SW21 MULTI-DISH SWITCHES, TWO RECEIVERS



This diagram omits grounding for clarity. Make sure to ground the system in accordance with the *National Electrical Code* (NEC) and all local electrical codes. See *Grounding the System* on page 94 for guidance on grounding.



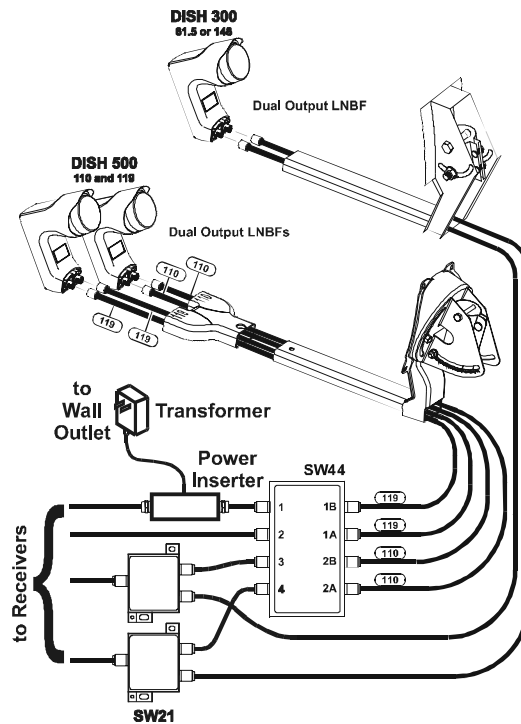
When you set up your system following this diagram and run **Check Switch**, the **Installation Summary** screen should similar to the one shown below.



TWO DISHES, THREE DUAL-OUTPUT LNBFs, ONE SW44 SWITCH, TWO SW21 SWITCHES, FOUR RECEIVERS

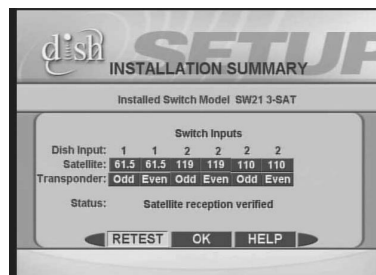


This diagram omits grounding for clarity. Make sure to ground the system in accordance with the *National Electrical Code* (NEC) and all local electrical codes. See *Grounding the System* on page 94 for guidance on grounding.



Note: In this installation, only two receivers will get signal from all three LNBFs. The other two receivers will get signal from only two LNBFs.

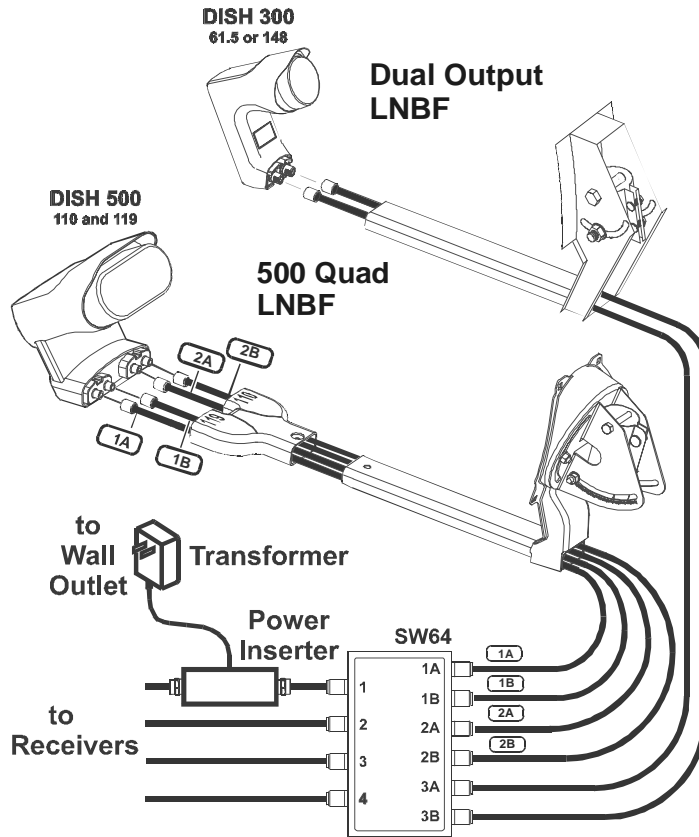
When you set up your system following this diagram and run **Check Switch**, the **Installation Summary** screen should look similar to the one shown below for the two receivers connected to the SW21 switches.



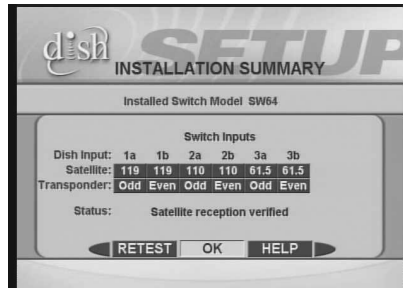
**TWO DISHES, ONE QUAD LNBF, ONE DUAL-OUTPUT LNBF, ONE SW64
MULTI-DISH SWITCH, FOUR RECEIVERS**



This diagram omits grounding for clarity. Make sure to ground the system in accordance with the *National Electrical Code* (NEC) and all local electrical codes. See *Grounding the System* on page 94 for guidance on grounding.



When you set up your system following this diagram and run **Check Switch**, the **Installation Summary** screen should look similar to the one shown below.



GROUNDING THE SYSTEM

After you have installed either the DishPro or Legacy system, you must ground the system, and then connect each receiver to a telephone line, following these instructions.

INSTALLING THE GROUND BLOCK

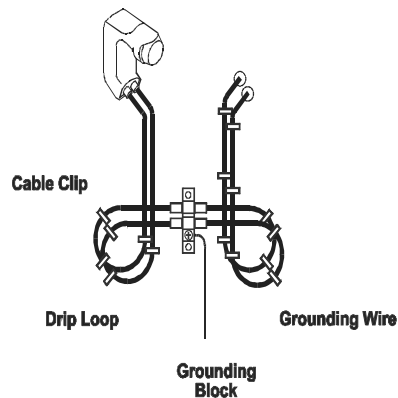


A properly grounded multi-dish switch can take the place of a ground block. The following instructions apply to a block or a switch.

You may want to install the ground block onto the side of the building, or on some other sturdy structure as close as possible to the power entry ground. Make sure that the location is stable, and that you fasten the ground block tightly to the surface. As stated in Article 820-40 of the *National Electrical Code* (NEC), locate the ground block as close as possible to the power entry ground.

RUNNING THE COAXIAL CABLES TO THE GROUND BLOCK OR SWITCH

1. Mount the ground block or switch so that its connections are horizontal. This helps keep moisture from leaking into the connections. Using the shortest path possible, run the coaxial cable(s) from the LNBF(s) to the input(s) on the ground block or switch.
2. Put a drip loop in each cable to allow moisture to drip from the cable before it runs into the ground block or switch.



3. Run the ground wire from the ground block or switch to the power entry ground of the building in accordance with the *National Electrical Code* (NEC) and all local electrical codes.



A ground wire must *always* be a single piece of wire. *Never* splice two wires together for a ground. Corrosion and weathering can lead to a poor connection at the splice, making the ground ineffective and dangerous. If you cut the ground wire too short, replace it with a single wire cut to the correct length.

4. Use cable clips to attach the cable to the side of the building. This helps prevent damage.

RUNNING THE COAXIAL CABLE(S) TO THE RECEIVER(S)

1. Using the shortest path possible, run the coaxial cable(s) from the ground block or switch to the satellite receiver(s). Do *not* kink or pinch any cable. Cables should be bent *only* in gentle curves.



Do *not* use a longer cable between the satellite dish and the LNBF than is specified in the DishPro or Legacy system installation instructions. In the case of a Legacy system, you may have to install a line amplifier to boost the satellite signal. Otherwise, the system is more likely to lose the signal during periods of rain, snow, or heavy cloud cover. If your system requires more cable than the limit specified in these installation instructions, you should consider having the system professionally installed.

2. Put a drip loop in each cable at a point before it enters the building. A drip loop allows moisture to drip from the cable before it runs into the building.



Before drilling any holes in the wall or roof of your building, make sure that there are no wires or pipes in the area of the holes. If you are not comfortable doing this, contact a professional in your area. Follow all safety instructions and building codes.

3. Locate each receiver inside the building, against or near an outside wall. Then drill a hole through the outer wall to pass a cable inside the building. If a receiver is located in an interior room, run a cable through the outside wall, and into an attic, basement, or crawl space in order to reach the receiver.
4. Seal all holes that you drill in the building with silicone or other weatherproof sealant after installation. Once each cable is inside the building, you may attach it to a wall receptacle or directly to a receiver.



Tighten the back panel coaxial cable connections *only* by hand. Using a wrench may over-tighten the connections, causing damage. Such damage is *not* covered by the Limited Warranty in the *User Guide* that came with the system.

Tip: If you have the receiver connected to a Digital Subscriber Line (DSL) on the phone line, you may need to install a DSL filter between the receiver and the telephone jack. You can obtain the filter from your DSL provider.

CONNECTING EACH RECEIVER TO A TELEPHONE LINE

You *must* keep each receiver connected to an active telephone line. Otherwise, you may not be able to order pay per view programs or use all of the DISH Interactive features. Run a telephone cable with a standard RJ-11 connector from each receiver's back panel Phone Jack to an active telephone connection.

Note: You *may* be able to use a wireless telephone extender. However, this may *not* support all the features of some receivers.

You *must* also set up each receiver for your telephone system (touch-tone or rotary/pulse), and set a telephone number prefix, if you need a prefix to make an outside call.

1. Display the **Installation and Setup** menu.
2. Select the **Telephone System** option to display the **Telephone System Setup** menu.



3. Select the **Touch Tone** or the **Rotary/Pulse** option in the **Phone Type** list.

Note: Usually, you need a telephone number prefix only for business installations. For most residential installations, all you need to do is set the telephone system type. The default setting of **No Prefix** will allow correct dialing. If this is the case, select the **Save** option to save the above setting, and stop here. If you do need to set a prefix, then instead of selecting the **Save** option, go on to step 4.

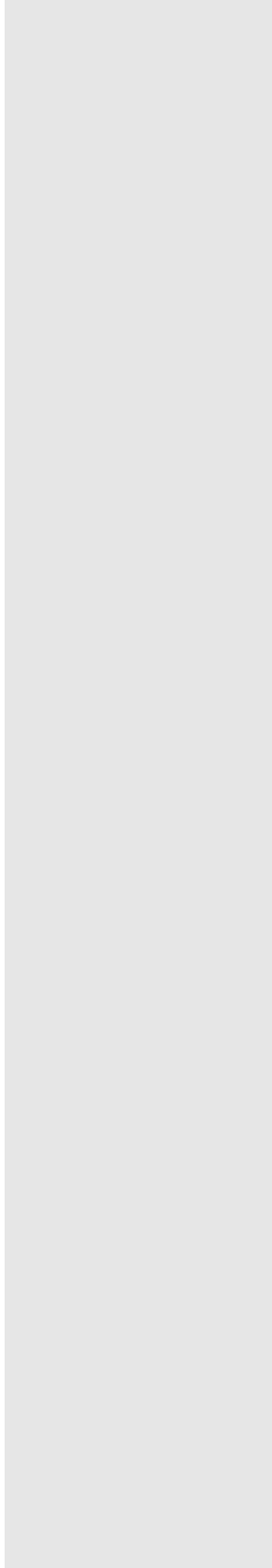
4. Move the highlight to the **No Prefix** or the **Prefix code** option in the **Outside Line Prefix** list. Press the **Select** button to select the highlighted option.



5. If you selected the **No Prefix** option, highlight **Save** to finish.

If you selected the **Prefix code** option, the receiver displays two boxes (highlighting the top box) where you must enter the digits. To do this, do the following:

- a) Enter the number of digits required to obtain an outside line in the top box.
 - b) Move the highlight to the bottom box.
 - c) Enter the exact sequence you dial the phone to obtain an outside line in the bottom box.
6. Move the highlight to the **Save** option. Press the **Select** button to save the settings.



Chapter 5

Reference

TROUBLESHOOTING TABLES

Use these tables if you have problems using the system *before* calling the Customer Service Center. Many problems arise from misunderstandings of how the system works, especially when you are just becoming familiar with it. These tables cover many problems, usually with a simple solution for each one. To solve a particular problem, do the following:

1. Review the section in this *Guide* that relates to the problem.
2. If you cannot find a solution, then find the section in the following tables that relates to the problem.
 - Read the *What's Happening* column until you find the problem.
 - Read the information in the *Possible Reason* column.
 - Try each of the suggested solutions in the *What to Do* column.
3. For more information, call the Customer Service Center at 1-800-333-DISH (3474), or see www.dishnetwork.com.

Note: Before calling the Service Center, have ready the date of purchase and either your customer account number, the receiver conditional access number, or the receiver model number. Display the *Important System Information* menu to find these numbers (See *Ordering your Programming* on page 2). Also, write down any error messages that the receiver displays on the television screen.

ON-SCREEN MESSAGES

This table describes some on-screen messages in the order of their *message numbers*. Find the message number in the upper right corner of the message displayed on your TV screen, and then find the matching number in this table.

Message Number	Possible Reason	What to Do
001	There may be a problem with the multi-dish switch.	Check the coaxial cables and their connections to and from the multi-dish switch. Make sure that all required cables are in place, and check that all cable connections are tight and dry (for outdoor cables). If this does not work, call the Customer Service Center for help.
002	Heavy rain, snow, or cloud cover may be interfering with transmission of the satellite signal, or there may be other interference.	Note the local weather conditions. Remove any snow or other debris which may have collected on the satellite dish. Make sure that the satellite dish has a clear line of sight to the satellite. Check whether branches or leaves have grown into the line of sight. Make sure that the satellite dish is aimed at the satellite. Check the strength of the signal using the Point Dish/Signal menu. Consult your installer to re-aim the dish, if necessary, to obtain the strongest possible signal.
003, 004	The wrong type of coaxial cable may be used in the system, or the cable run length may be too long. Or, there may be a problem with the multi-dish switch.	Make sure the system uses RG6 coaxial cable; if not, call your dealer or installer. Check the dish-to-receiver cable run length; if it is over 100 feet, call your dealer or installer. Check the coaxial cables and their connections to and from the multi-dish switch. Make sure that all required cables are in place, and check that all cable connections are tight and dry (for outdoor cables). If this does not work, do the Check Switch test.
005	The receiver may not yet have been electronically linked with the Smart Card, via the satellite signal. The satellite dish may have moved so that it is no longer picking up the satellite signal. The cable connections may have loosened or have moisture inside. There may be an interruption of the satellite signal.	If you have authorized the receiver, wait a few minutes to see if the message is removed. Make sure that all required cables are in place, and check that all cable connections are tight and dry (for outdoor cables). Make sure that the satellite dish has a clear line of sight to the satellite. Check whether branches or leaves have grown into the line of sight. Check that the Signal Strength bar in the Point Dish/Signal menu is green and displays the word Locked . If not, contact your installer to re-aim the satellite dish. If you have not authorized the receiver, call the Customer Service Center for help.
006	The receiver may not be connected to an active telephone line. The Smart Card credit limit may have been suspended.	You <i>must</i> connect the receiver to an active telephone connection at all times. If you install two or more receivers, you <i>must</i> connect <i>each</i> receiver to an active telephone connection at <i>all</i> times. Review your pay per view purchases to check the Smart Card credit limit.
008	Maybe the receiver is connected to a DSL (Digital Subscriber Line) phone line.	Install a DSL filter between the receiver and the telephone wall jack. You can obtain the filter from your DSL provider.
011, 012	Viewers in specific areas are prohibited from watching certain programs. <i>For example</i> , viewers who live close to a particular football stadium may be prohibited from watching football games that are played in that stadium.	Remember that the program providers specify which programs are “blackout” for which viewers, <i>not</i> DISH Network SM .
013, 014	You may have tried to tune to a program on a channel which you have not bought.	You <i>must</i> buy a channel <i>before</i> you can tune to a program on that channel. Call the Customer Service Center to buy the channel, or if you believe this message was displayed by mistake.

015	You may have just plugged in the receiver, and it is acquiring the satellite signal. Or, the receiver may have temporarily lost the signal.	Wait a few minutes to see if the message is removed. Make sure that all required cables are in place, and check that all cable connections are tight and dry (for outdoor cables). Make sure that the satellite dish has a clear line of sight to the satellite. Check whether branches or leaves have grown into the line of sight. Check that the Signal Strength bar in the Point Dish/Signal menu is green and displays the word Locked . If not, contact your installer to re-aim the satellite dish.
018	The receiver may not be connected to an active telephone line. The Smart Card credit limit may have been exceeded.	You <i>must</i> connect the receiver to an active telephone connection at all times. If you install two or more receivers, you <i>must</i> connect <i>each</i> receiver to an active telephone connection at <i>all</i> times. Review your pay per view purchases to check the Smart Card credit limit. Call the Customer Service Center for help checking the credit limit, and/or to get authorization to make a purchase.
019	The Smart Card may be inserted up side down or backwards.	Check that the Smart Card is inserted right side up, with the picture on top and the arrow facing into the receiver front panel slot.
020	The receiver will work <i>only</i> with the Smart Card that was inserted in the receiver when the Customer Service Center authorized the receiver.	Insert the proper Smart Card into the receiver front panel slot. Call the Customer Service Center for help.
021	The Smart Card may be missing or may not be inserted correctly.	Check that the Smart Card is fully inserted into the receiver front panel slot.
022	The receiver may not yet have been electronically linked with the Smart Card, via the satellite signal. The satellite dish may have moved so that it is no longer picking up the satellite signal. The cable connections may have loosened or have moisture inside. There may be an interruption of the satellite signal.	If you have authorized the receiver, wait a few minutes to see if the message is removed. Make sure that all required cables are in place, and check that all cable connections are tight and dry (for outdoor cables). Make sure that the satellite dish has a clear line of sight to the satellite. Check whether branches or leaves have grown into the line of sight. Check that the Signal Strength bar in the Point Dish/Signal menu is green and displays the word Locked . If not, contact your installer to re-aim the satellite dish. If you have not authorized the receiver, call the Customer Service Center for help.
026	The receiver may have temporarily lost the satellite signal.	Wait a few minutes to see if the message is removed. Make sure that all required cables are in place, and check that all cable connections are tight and dry (for outdoor cables). Make sure that the satellite dish has a clear line of sight to the satellite. Check whether branches or leaves have grown into the line of sight. Check that the Signal Strength bar in the Point Dish/Signal menu is green and displays the word Locked . If not, contact your installer to re-aim the satellite dish.
028	The receiver may need to get new software before you can use it to order pay per view programs.	Turn the receiver off. Doing this allows the receiver to “download” new software via the satellite signal. The download may take several minutes; do <i>not</i> disturb or unplug the receiver during this time. When the download is done, you will be able to use it to order pay per view programs.
032	You may have tried to set a VCR Event Timer without having set up the receiver to control the VCR.	You <i>must</i> set up the receiver to control the VCR <i>before</i> you can set a VCR Event Timer . See the <i>User Guide</i> for instructions.
059	You may have tried to close an installation menu without having done the Check Switch test.	If your setup includes a multi-dish switch, you <i>must</i> do the Check Switch test.
060	You may have aimed the satellite dish at one satellite, but selected the option for another satellite on the Point Dish/Signal menu.	Make sure that you have selected the option for the right satellite on the Point Dish/Signal menu. Make sure that the cable(s) for the satellite you have selected are connected to the LNBF that receives signals from that satellite. Re-aim the satellite dish at the right satellite.

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061	You may have set up the receiver to accept a transmission (a "download") of the latest operating software via the satellite signal.	It is <i>very</i> important for the receiver to get the latest operating software, so let the receiver do so. The "download" may take several minutes. <i>Do not</i> disturb or unplug the receiver during this time.
074	The receiver gives you three chances to enter the correct password. If you fail to do so, the receiver "times out" and will not allow you to try again for several minutes.	Wait a few minutes and then try again to enter the password. Note: The "time out" feature is designed to prevent someone from trying password after password until he or she happens to guess the right one and so gains unauthorized access to the receiver.
078, 079, 080	You may not have connected the receiver to an active telephone line. Or, the telephone line may be defective. Maybe the receiver is connected to a DSL (Digital Subscriber Line) phone line.	Connect the receiver to an active telephone line. Make sure that the telephone line to which you connect the receiver is working properly. Note: To be able to order pay per view programs, you <i>must</i> keep the receiver connected to an active telephone line at all times. If your setup includes more than one receiver, this applies to <i>each</i> receiver. The receiver uses the telephone line to make toll-free calls, usually in the middle of the night, to send information to the Customer Service Center. Install a DSL filter between the receiver and the telephone wall jack.
093	You may have set up the receiver to reset itself back to the "factory defaults," <i>that is</i> , the settings it had when it was shipped from the factory.	If you want to reset the receiver to its factory default settings, select the Yes option. If not, select the No option.

DISHPRO TWIN LNBF

What's Happening	What's Wrong	What You Can Do
When you run Check Switch, you do not see "Twin" identified as a Device or LNB. All entries show "X"s.	<ul style="list-style-type: none"> The DishPro Twin LNBF may not be properly connected. Cables may be too long, over 200 feet. Cables may not be rated for 2150 MHz. You may have DishPro Adapter installed on a DishPro receiver. May have a non-DishPro switch or LNB or incompatible accessory device* in the system. 	<ul style="list-style-type: none"> Check all cable connections in your system and run Check Switch again. Make sure cable length between receiver and DishPro Twin does not exceed 200 feet. Rerun check switch. Make sure cable is rated for 2150 MHz. Rerun check switch. Remove the DishPro Adapter; this device is only for non-DishPro receivers. Rerun check switch. Remove any non-DishPro switches/ LNBs or incompatible accessory devices* from the system. All LNBs and switches must be DishPro. Rerun check switch.
When you run Check Switch, you see "Twin" identified as the Device/LNB and Satellite shows "Conn" but you do not see "Satellite Reception Verified".	<ul style="list-style-type: none"> The DishPro Twin LNBF is connected but no satellite signal is present. 	<ul style="list-style-type: none"> Check the point dish/signal screen to confirm you have satellite signal. If not, check your dish antenna to ensure the DishPro Twin is installed properly, the dish is pointed/peaked on the satellite signal and there is nothing blocking the signal path to the dish. Rerun check switch.
When you run Check Switch, you see "Satellite Reception Verified" but you see "Feed" instead of "Twin" identified as the Device/LNB.	<ul style="list-style-type: none"> The DishPro Twin is connected but something in the system may be blocking the switch commands. 	<ul style="list-style-type: none"> Check the cable path between the DishPro Twin and the receiver and remove any incompatible accessory devices*. Rerun check switch.

When you run Check Switch, you do not see "Twin" identified as a Device or LNB, but odd transponders are detected only on one satellite.	<ul style="list-style-type: none"> Your box may need a software upgrade. You may have DishPro Adapter installed on a DishPro receiver. May have a non-DishPro switch or LNB in the system 	<ul style="list-style-type: none"> From point dish/signal screen, select 119 west satellite and an odd transponder greater than 10 (e.g., 11). Confirm satellite signal is present. Turn the receiver off and wait 30 minutes. Rerun check switch. Remove the DishPro Adapter; this device is only for non-DishPro receivers. Rerun check switch. Remove any non-DishPro switches/LNBs from the system. All LNBs and switches must be DishPro. Rerun check switch.
When you run Check Switch, you see "Twin" identified as the Device/LNB but you only have signal confirmed from one satellite.	<ul style="list-style-type: none"> The DishPro Twin LNBF is connected but the dish may not be pointed to receive signal from both 110 and 119 satellites. 	<ul style="list-style-type: none"> If the check switch summary screen shows "119 W" on Dish Input 2, you need to point you dish 9 degrees to the east and repeat your dish. Rerun check switch. If the check switch summary screen shows "110 W" on Dish Input 1, you need to point you dish 9 degrees to the west and repeat your dish. Rerun check switch. Make sure skew setting is correct for a Dish500 installation at your zip code. Rerun check switch.
When you run Check Switch, you see "Twin" identified as a Device or LNB, but only odd transponders are detected.	<ul style="list-style-type: none"> Cables may not be rated for 2150 MHz. 	<ul style="list-style-type: none"> Make sure cable is rated for 2150 MHz and all accessory devices are compatible. Rerun check switch.
Getting receiver messages that signal is lost or being acquired	<ul style="list-style-type: none"> Check the weather conditions to see if heavy rain or snow could be temporarily block the signal. Check for any obstructions in way of the dish like new growth on trees 	<ul style="list-style-type: none"> Wait for weather to clear up and restore signal. Clear obstructions from the signal path.

* Compatible accessory devices must pass 2150 MHz signals, 22 KHz signals both directions (per DiSEqC 2.0 specifications), and pass DC power.

USING THE REMOTE CONTROL

What Is Happening	Possible Reason	What to Do
You cannot find the remote control.	N/A	Use the receiver front panel Control Buttons to control the receiver until you find the remote. If the remote control is permanently lost or too damaged to use, call the Service Center to order a replacement.
When you press a button on the remote control, the receiver does not do what you expect.	The remote control may be missing batteries, the batteries may be incorrectly placed in the remote, or the batteries may be weak or dead.	If the batteries are missing or dead, insert fresh AAA-size batteries. If the remote has fresh batteries, check whether they are placed according to the label diagram. If not, remove them and place correctly.
When you press the remote control Power button to turn the receiver ON, the receiver front panel Power light does not light up.	Other lights are too bright. Remote control not operating properly or the batteries are weak or dead. The receiver power cord not plugged into a power outlet, or there may be a problem with the power.	Try other remote control buttons to see if the receiver is responding. Replace the remote batteries with fresh ones. Check that the receiver power cord is not damaged, and that the plug is inserted correctly into the outlet.
You use a pyramid type IR extender (not a "mouse tail"), and it does not seem to work.	The IR sensor on the extender that receives the remote control signals may not be facing the remote control. The IR cable on the extender that sends the signal to the receiver may not be right in front of the IR sensor on the receiver front panel.	Make sure that the extender that receives the signal from the remote control is facing the right way, so that the IR sensor can receive the remote control signals. Make sure that the IR cable on the extender that sends the signal to the receiver is right in front of the IR sensor on the receiver front panel, so that the receiver IR sensor can receive the signals. If doing the above does not solve the problem, contact the manufacturer of the extenders for assistance.

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HEARING A PROGRAM

What Is Happening	Possible Reason	What to Do
The receiver front panel Power light is on and there is a good picture on the TV set, but you do not hear any sound.	You may have muted the sound, or set the volume so low that you cannot hear it. The audio connections may not be properly connected.	Check the volume level on the TV or audio device. Turn off the mute or turn up the volume, as required. Check the audio connectors and cables from the receiver to the TV or the sound system. Check the TV speakers or the sound system.
You hear a foreign language with a program.	You may have set the receiver to select an alternate audio language.	Use the Alternate Audio Language menu to select the language that you prefer.

WATCHING A PROGRAM

What Is Happening	Possible Reason	What to Do
The receiver front panel Power light is on, but the TV image: is black (no picture), is frozen, has breakups, has "snow," or shows small squares of various colors.	The TV set may not be working properly. If the TV and the receiver are working properly, there may be interference with the satellite signal. The TV may be wired to the wrong input.	Make sure that the TV set is plugged into an electrical outlet. Make sure the outlet has electrical power. Make sure that the TV is turned on. If the receiver is connected to the TV using only the RF or VHF connections, make sure that the TV is tuned to channel 3 or 4 (whichever works best in your area) and that the receiver back panel Channel 3/4 Switch is set to the same channel as the TV. Make sure that the TV brightness and contrast are adjusted correctly. Make sure that the TV is connected properly to the receiver. Make sure that the TV's text mode and closed captioned features are turned off. Set the TV to SVIDEO or VIDEO input. Check that the system has been installed correctly. Make sure that all required coaxial cables are in place, and check that all cable connectors are tight and dry (for outdoor cables). Make sure that the satellite dish has a clear line of sight to the satellite. Check whether branches or leaves have grown into the line of sight. Make sure that the satellite dish is aimed at the satellite. Check the strength of the signal using the Point Dish and Signal Strength menu. Consult your installer to re-aim the dish, if necessary, to obtain the maximum possible signal strength. Note the local weather conditions. Heavy rain, snow, or cloud cover may be interfering with transmission of the satellite signal. Remove any snow or other debris which may have collected on the satellite dish.
The receiver front panel Power light is on, and there is a picture on the TV screen, but the picture: has sparkles or is grainy, has a herringbone pattern, lacks color or vertical hold, or wobbles, or looks "washed out" or fuzzy.	The TV set may not be working properly. If the receiver is connected to the TV using only the RF or VHF connections, there may be a strong local broadcast on the same channel, or a channel adjacent to the one to which the TV is tuned. There may be interference from other nearby electrical devices (such as cellular telephones, computers, microwave ovens, radios, stereos, or TVs).	Make sure that the TV brightness and contrast are adjusted correctly, and that the TV is working properly. Make sure that the TV is connected properly to the receiver. Check other nearby electrical devices as possible sources of interference. Check that all required coaxial cables are in place. Check for moisture or water leaking into all connections. Dry them out if needed, then seal them with coaxial cable sealant. Check the dish-to-receiver cable run length; if it is over 100 feet, call your dealer or installer.
A "black box" fills almost all of the TV screen.	You may have turned on the Closed Captioned feature on the TV, and put that feature into Text mode.	Using the TV remote control and/or menus displayed by the TV (<i>not</i> the receiver remote control or the menus displayed by the receiver), turn off the closed captioned feature.
The TV screen is all blue.	You may have connected the receiver to an input on the TV that is incorrect for the signal output from the receiver.	Check your TV owner's manual for the correct TV input to use for the signal output from the receiver.

USING THE MENUS

What Is Happening	Possible Reason	What to Do
You were using a menu, and it suddenly closed.	The receiver has a time-out feature that closes any menu after several minutes of no activity. This will discard any changes you have made, but otherwise does no harm to the receiver.	Start over again.

USING THE PROGRAM GUIDE OR THE BROWSE BANNER

What Is Happening	Possible Reason	What to Do
In the Program Guide , some channels have a red background.	Red means that you have not bought the program. You <i>must</i> buy a channel before you can tune the receiver to it.	If you want to buy a channel, call the Customer Service Center.
You try to display future programs in the Program Guide or Browse Banner , but find you cannot.	The Program Guide and Browse Banner can display programs scheduled for an extended, but not unlimited time beyond the present.	Try displaying the Program Guide again later. By that time, it may show programs for the time and date you want.
You try to display programs that have ended in the Program Guide or Browse Banner , but find you cannot.	The Program Guide and Browse Banner can display <i>only</i> programs that have not yet ended. These features <i>cannot</i> display a time earlier than the present.	Contact the program providers for details on past programs.
When you are using the Program Guide or Browse Banner , some channels are missing.	You may have applied a Favorite List other than the list named All Chan . You may have set up the Program Guide so that when the receiver is locked, the Guide hides adult channels. If your setup includes a multi-dish switch, you may need to do the Check Switch procedure.	You can change the applied Favorite List while using the Program Guide , by pressing the remote control Guide button. You can choose another custom Favorite List, the All Chan list, which includes all the channels, or the All Sub list, which includes all subscribed channels. Unlock the receiver for the Program Guide to display adult channels. Do the Check Switch procedure (see the installation instructions for details).

USING LOCKS

What Is Happening	Possible Reason	What to Do
You set a lock (<i>for example</i> , a lock on programs by ratings), but the lock does not take effect.	You may not have locked the receiver.	You <i>must</i> lock the receiver to apply any lock that you have set.
You forgot the password, so that you are unable to unlock the receiver.	You may not have written down the password, to keep it in a safe place.	Call the Customer Service Center. You <i>must</i> provide the following information: (1) your name; (2) your address; (3) your telephone number; (4) the receiver serial identification number; and (5) your Personal Identification Number (PIN), if you use one.

CHANGING CHANNELS

What Is Happening	Possible Reason	What to Do
You enter a desired channel number. The channel changes, but the new channel is not exactly the channel you entered. You are scanning up or down through the channels, and the receiver is skipping channels that you know you have bought.	<p>You may have made a mistake entering the channel number, or the channel number you entered may be invalid.</p> <p>If so, the channel displayed is the closest possible to the channel you entered.</p> <p>If you entered the number for a channel that you have not bought, the receiver will change to the channel and allow you to buy the channel or display a message.</p> <p>If a Favorite List other than All Chan is applied, the receiver will skip channels that are not on the applied list.</p> <p>If you have set up the Program Guide to hide adult channels and the receiver is locked, the receiver will skip such channels.</p>	<p>Carefully retry entering the channel number you want.</p> <p>Press the remote control Recall button to return to the previous channel number. Select All Chan as the active Favorite List.</p> <p>Unlock the receiver so that it does not skip adult channels.</p> <p>If you want to buy a channel, call the Customer Service Center.</p>

USING FAVORITE LISTS

What Is Happening	Possible Reason	What to Do
You press the remote Guide button while the Program Guide is displayed. You find that you can apply <i>only</i> the All Chan list or the All Sub list.	If you have not added channels to any custom Favorite List, you will be able to apply <i>only</i> the All Chan list or the All Sub list.	You <i>must</i> add channels to a custom Favorite List <i>before</i> you can apply it.
You try to change the All Chan list or the All Sub list. The receiver displays an ERROR message.	The receiver will <i>not</i> allow you to change the All Chan list or the All Sub list.	Choose another list to change. Note: You <i>can</i> change the All Sub list by changing what channels you buy.
You try to apply an empty Favorite List. The receiver displays an ERROR message.	The receiver will not allow you to apply an empty list.	Choose another list to apply, or add at least one channel to the empty list.
A Favorite List does not show channels that you know you have added to it.	If you have set up the Program Guide to hide adult channels and the receiver is locked, the Favorite List will not show such channels.	Unlock the receiver for the list to show adult channels.

BUYING A PAY PER VIEW PROGRAM

What Is Happening	Possible Reason	What to Do
Someone orders a pay per view program without your permission.	You may have been away from the receiver, and someone else used it.	Lock the purchase of pay per view programs. <i>Remember that you are responsible for all pay per view purchases, whether or not you authorize such purchases.</i> If you lock pay per view purchases, then anyone who wants to order a pay per view program <i>must</i> enter the password.
You find that you are not able to order a pay per view program.	The receiver may not be connected to an active telephone line. The Smart Card credit limit may have been exceeded.	You <i>must</i> connect the receiver to an active telephone connection at all times. If you install two or more receivers, you <i>must</i> connect <i>each</i> receiver to an active telephone connection at <i>all</i> times. Review your pay per view purchases to check the Smart Card credit limit.
You find that you are not able to cancel a pay per view program.	You ordered a pay per view program, and then decided not to watch it.	You <i>cannot</i> cancel an order for a pay per view program, whether it was just ordered or ordered earlier.
Your setup includes more than one receiver. You order a pay per view program, but it does not appear via all of the receivers.	You ordered a pay per view program, and want it to be available via all the receivers in your setup.	If you want to watch a pay per view program on TVs connected to up to six receivers, you must <i>order</i> the program for <i>each</i> receiver but you only <i>pay</i> for the program <i>once</i> .

USING THE TELEPHONE FOR VOICE/DATA/FAX

What Is Happening	Possible Reason	What to Do
While you are making a telephone call, you hear "clicks."	The receiver may have tried to call the Customer Service Center to send pay per view purchase information. When the receiver found that the telephone was busy, it automatically disconnected.	You do not have to do anything. You can always use your telephone line, because the receiver automatically hangs up if it finds the line is busy.
The receiver cannot connect to DISH Network.	Maybe the receiver is connected to a DSL (Digital Subscriber Line) phone line.	Install a DSL filter between the receiver and the telephone wall jack.
You pick up the telephone to make a call, but you do not hear a dial tone.	The receiver was calling the Customer Service Center to send pay per view information. When the receiver found that the telephone was busy, it automatically disconnected.	Hang up, and then pick up the telephone again to get a dial tone.
Your computer or facsimile (FAX) machine tries to send a FAX or modem transmission, but fails.	The receiver was calling the Customer Service Center to send pay per view information. When the receiver found that the telephone was busy, it automatically disconnected. The FAX or modem found that there was no dial tone, and cancelled the transmission.	Resend the FAX or modem transmission.
Your computer or FAX machine was receiving a FAX or modem transmission, but an error occurred.	The receiver may have tried to call the Customer Service Center to send pay per view purchase information during the FAX or mode call. When the receiver found that the telephone was busy, it automatically disconnected. This generated "clicks" that caused an error in the FAX or modem transmission.	Have the sender resend the FAX or modem transmission.

USING EVENT TIMERS

What Is Happening	Possible Reason	What to Do
You try to set up an event timer and the receiver displays a message noting that the program is locked.	You <i>must</i> enter the password <i>before</i> you can create an event timer for a locked program.	To be able to set up an event timer for the program, first enter the password.
You try to set up an event timer and the receiver displays a message noting that the program is a pay per view event.	You <i>must</i> order a pay per view event <i>before</i> you can create an event timer for it.	To be able to set up an event timer for the event, first order it.
You try to set up an event timer, but the receiver displays an Error message giving you the option to delete an event timer that was set up earlier.	You already have set up the maximum number of event timers.	To be able to set up a new event timer, delete one of the event timers you set up earlier.
You set up an event timer, but the receiver does not tune to the channel of the program, or does not record the program.	You may have set up a <i>Reminder Event Timer</i> but what you should have set up is an <i>Auto-Tune Event Timer</i> , or a <i>VCR Event Timer</i> .	Remember that a <i>Reminder Event Timer</i> just reminds you that the program is about to start. An <i>Auto-Tune Event Timer</i> reminds you and tunes the receiver to the channel of the program. A <i>VCR Event Timer</i> reminds you, tunes the receiver, and starts the VCR.
You set up an event timer for a program that is repeated (such as a regularly scheduled program), but the timer does not operate for a showing of the program.	You may have set up a timer with an incorrect frequency.	Remember that a <i>Once</i> event timer operates just one time. A <i>Mon.-Fri.</i> event timer operates Monday through Friday on the same channel at the same time. A <i>Daily</i> event timer does the same, Monday through Sunday. A <i>Weekly</i> event timer operates once a week on the same channel at the same time.
You set up an event timer, but the timer does not operate at all.	The program time may have changed so that the event timer overlapped another event timer. The program time may have changed by more than twenty-four hours.	If the receiver is ON and finds an event timer overlap, it will display the Event Timer Scheduling Conflict menu. You <i>must</i> edit or delete one of the overlapping event timers. No event timer will operate if the program time changes by more than twenty-four hours.
You set up a <i>Once</i> event timer, but the timer operates at a time different from what you expect.	The program time changed.	A <i>Once</i> event timer always operates at the actual time of the program.
You stop the operation of an event timer for one showing of a program that is repeated (such as a regularly scheduled program), but the timer operates for the next showing.	Stopping the event timer applies <i>only</i> to the current showing of the program.	To stop all operations of a repeated event timer, you <i>must</i> delete the event timer. Note: The receiver deletes a <i>Once</i> event timer when it operates.
You are testing a VCR code to see if the receiver controls a VCR. The VCR does not do the test.	The VCR may not be turned ON, there may not be a tape inserted, the tape may not be rewound, or the write-protect tab on the tape may have been removed. The code you are testing may not be valid for the VCR.	Make sure the VCR is turned ON, with a blank tape inserted on which you want to record, that the tape is rewound, and that the write-protect tab on the tape is intact. Try another VCR code from the VCR Codes table. The remote control user guide provides this table.

DEVICE CODES

These tables contain the manufacturer codes for programming the remote to control other devices. Every attempt has been made to include all device codes. If your device is not listed or the codes do not work, the remote may not control your device.

TV CODES

TELEVISION	CODES
Akai	532, 570, 573
Alba	613
A-Mark	620
Amstrad	533
Anam	509, 541, 620, 621, 691, 698
AOC	505, 506, 519, 520, 620, 695, 712
Archer	620
Audiovox	620
Bauer	611
Baycraft	536
Brockwood	695
Broksonic	562, 691
Candle	506, 522, 523, 525, 536, 691, 695, 712
Capehart	519, 695
Circuit City	695
Citizen	506, 516, 522, 523, 524, 525, 526, 691, 712
Colortyme	573, 695
Concerto	523
Contec	527, 528, 541, 591, 691
Craig	536, 541, 691, 694
Crown	526, 536
Curtis Mathes	506, 516, 526, 573, 703, 712
CXC	541, 691
Daewoo	505, 524, 526, 529, 530, 531, 532, 698, 712, 719
Daytron	526, 695
Dixi	532, 588, 620

TELEVISION	CODES
Dumont	695
EchoStar	722
Electrohome	526, 573, 709, 713
Elta	532
Emerson	526, 527, 528, 533, 534, 535, 536, 537, 538, 539, 540, 541, 573, 622, 691, 692, 695, 696, 699, 720,
Envision	506, 712
Etron	532
Fisher	542, 590
Formenti	611
Fortress	573, 605
Fujitsu	534, 694
Funai	534, 541, 691, 694
Futuretech	541, 691, 694
General Electric (GE)	503, 508, 509, 515, 540, 543, 544, 630, 695, 698, 701, 714, 715, 716
Genexxa	613
Goldstar	505, 523, 526, 545, 546, 573, 588, 693, 712
Granada	695, 711
Grand	695
Grandiente	711
Grundig	547
Hallmark	695
Harmon Kardon	561
Hinari	534
Hitachi	523, 526, 548, 549, 550, 551, 552, 553, 554, 555, 585, 597, 626, 702, 718
Infinity	566
JBL	566

TELEVISION	CODES
JC Penney	503, 505, 506, 516, 526, 531, 543, 596, 701, 714
Jenson	556, 573
JVC	557, 558, 559, 560
Kawasho	548, 561, 712
Kenwood	506, 573, 712
Kloss	522, 561, 610, 698
KTV	526, 539, 540, 541, 691, 696, 712
Lloyds	695
Lloytron	526
Loewe	588
Logik	518
Luxman	523
LXI	503, 563, 566, 590, 595, 617, 625, 701
Magnasonic	573
Magnavox	506, 520, 525, 536, 564, 565, 566, 567, 568, 569, 573, 575, 610, 710, 712
Marantz	506, 566, 573, 588, 712
Matsui	532, 609
Megatron	695
Memorex	518, 532, 590, 695
MGA	504, 505, 506, 571, 573, 695
Mitsubishi	504, 505, 570, 571, 572, 597, 623, 695, 705, 707, 712
MTC	505, 506, 516, 523, 531, 695, 712
NAD	502, 617, 695
National	509, 697, 698
National Quenties	697
NEC	505, 506, 507, 517, 523, 573, 627, 712

Chapter 5

Reference

TELEVISION	CODES
Nikkai	612, 613, 618
Nordmende	551
Normandic	717
Novabeam	561, 698
Nyon	701
Onwa	541, 691
Optonica	605, 607
Orion	694
Osaki	612
Panasonic	508, 509, 510, 511, 512, 566, 574, 689, 697, 698, 700, 706, 714, 716
Philco	505, 506, 525, 536, 564, 565, 568, 573, 610, 712
Philips	566, 588
Pioneer	502, 548, 551, 576, 708
Portland	505, 526, 712
Proscan	503
Proton	513, 519, 526, 536, 585, 624, 695
Pulsar	501
Quasar	508, 509, 577, 698, 700
Radio Shack	526, 541, 607, 612, 691, 698
RCA	503, 505, 515, 548, 579, 580, 581, 582, 583, 584, 586, 587, 625, 633, 634, 691, 698, 701, 708, 714, 715, 716
Realistic	590
Saba	551
Saisho	532, 533, 609
Sampo	506, 519, 698
Samsung	505, 506, 516, 523, 526, 532, 588, 612, 695, 704, 712, 721
Samwon	620
Sanyo	542, 589, 590, 591, 592, 609
SBR	588

TELEVISION	CODES
Schneider	588
Scott	526, 534, 537, 541, 593, 600, 691, 696, 701
Sears	503, 523, 534, 542, 563, 589, 590, 594, 595, 596, 598, 599, 601, 602, 603, 604, 617, 695, 703
Seimitsu	695
Sharp	526, 585, 591, 605, 606, 607, 608, 628, 629
Siemens	591
Signature	518
Silver	573
Solavox	612
Sony	500, 514, 521, 578, 609, 619, 622, 690
Soundesign	525, 536, 541, 691, 695
Spectricon	520, 620
Squareview	694
SSS	505, 541, 573, 691, 712
Supra	523
Supre-Macy	522
Sylvania	506, 525, 536, 564, 565, 566, 568, 573, 575, 600, 610, 611, 712
Symphonic	632, 692, 694
Tandy	605, 613
Tatung	509, 698
Technics	508
Techwood	523, 573
Teknika	504, 505, 516, 518, 522, 523, 524, 525, 526, 534, 536, 541, 614, 615, 691, 712
Teleavia	551
Telefunken	551
Teletex	532
Tera	513
Thomas	695

TELEVISION	CODES
Thompson	709
Thomson	551, 616
TMK	523, 573, 695
Toshiba	516, 590, 596, 617, 618, 631
Tosonic	528
Totevision	526
Toyomenko	695
Universal	543
Vector Research	506
Victor	557
Video Concepts	570, 691
Vidtech	505, 695, 712
Viking	522
Wards	505, 506, 515, 518, 534, 536, 543, 564, 565, 567, 568, 607, 619, 712, 714, 715
Yamaha	505, 506, 712
York	695
Zenith	501, 518, 693
Zonda	620

VCR CODES

VCR	CODES
Aiwa	588, 622, 623, 624
Akai	513, 514, 515, 516, 517, 518, 519, 520, 568,
Alba	546
Amstrad	588
ASA	565
Audio Dynamics	594, 600
Broksonic	559
Bush	589
Candle	580, 592, 593
Canon	542, 553, 554
Capehart	543, 546
Citizen	591, 592, 593

VCR	CODES
Craig	591, 608
Croslex	553
Curtis Mathes	554, 592, 605
Daewoo	534, 545, 546, 547, 593
Daytron	546
DBX	594, 600
Dumont	549
Dynatech	588
Electrohome	609
Emerson	505, 506, 507, 508, 509, 510, 511, 512, 559, 568, 588, 590, 609, 618
Finlandia	549
Finlux	549, 565, 588
Fisher	548, 549, 584, 588, 608, 610
General Electric (GE)	550, 551, 552, 554, 572, 591, 605
Goldstar	530, 555, 592, 612, 613
Goodmans	585, 589
Pentax	537, 592
Go Video	557 558, 620
Granada	549, 581
Grundig	565
Harmon Kardon	530, 569
Hinari	589
Hitachi	536, 537, 538, 539, 540, 541, 553, 588, 595, 596, 597
Instant Replay	553
ITT	518
JC Penney	530, 554, 580, 591, 594, 600, 601
Jenson	560
JVC	561, 562, 563, 564, 592, 594, 600, 601
Kenwood	562, 581, 592, 594, 600, 601
Lloyd	588
Logik	589
Luxor	518

VCR	CODES
Magnavox	527, 553, 554, 556, 565, 611
Marantz	530, 554, 565, 585, 592, 594, 600, 601, 603
MEI	554
Memorex	533, 549, 554, 566, 581, 585, 588, 608
MGA	567, 568, 609
Mitsubishi	562, 567, 568, 569, 570, 571, 609
MTC	544, 580, 588
Multitech	588, 589, 591
NAD	573
NEC	530, 531, 532, 562, 592, 594, 599, 600, 601, 602, 603, 604
Olympic	553
Optonica	585
Orion	506, 507
Panasonic	521, 522, 523, 524, 526, 553, 554, 598, 614, 628
Perdio	588
Philco	553, 554, 611
Philips	553, 554, 565, 585
Pioneer	553, 562, 573, 574, 575, 576, 600
Portland	546, 593
Proscan	553, 605
Pulsar	533
Quartz	581
Quasar	553, 554, 577, 578
Radio Shack	607, 608, 609, 610
RCA	525, 526, 527, 528, 529, 537, 553, 591, 605, 606, 615, 630, 631
Realistic	549, 554, 580, 581, 584, 585, 588
Ricoh	502
Saisho	506, 507
Salora	567, 581
Samsung	517, 534, 579, 580, 591

VCR	CODES
Sansui	532, 544, 562, 600, 621
Sanyo	549, 581, 582, 583, 608
SBR	565
Schneider	589
Scott	508, 559, 590
Sears	548, 549, 581, 584, 608, 610,
Sentra	546
Sharp	585, 607, 609, 625
Shintom	589
Sony	500, 501, 502, 503, 504, 629
Sylvania	553, 554, 556, 567, 588, 611
Symphonic	588, 594
Tandy	588
Tashiko	588
Tatung	586, 594, 601
Teac	588, 594, 601
Technics	553, 554
Teknika	554, 587, 588
TMK	506
Toshiba	534, 535, 567, 590
Totevision	580, 591
Unitech	580
Vector Reaserch	530, 600
Victor	561, 562, 600
Video Concepts	568, 600
Videosonic	591
Wards	527, 554, 580, 585, 588, 589, 590, 591, 607, 608, 609
Yamaha	530, 592, 594, 600, 601
Zenith	500, 501, 533

Chapter 5

Reference

DVD PLAYER CODES

DVD Players	Codes
Magnavox	626
Pioneer	619
RCA	627
Sony	617
Toshiba	616

Tuner/Amplifier	Codes
Technics	2652
Victor	2657
Yamaha	2663, 2682

TUNER/AMPLIFIER CODES

Tuner/Amplifier	Codes
Aiwa	2656, 2680
Carver	2653
Fisher	2653
GE	2665
Goldstar	2677
JVC	2657, 2683
Kenwood	2676
Luxman	2681
LXI	2665
Marantz	2651
Memorex	2675
NAD	2669
Nakamichi	2671
Onkyo	2660, 2662, 2678
Optimus	2664
Panasonic	2652
Pioneer	2658, 2675, 2679
Proton	2654
Quasar	2652
RCA	2655
Realistic	2665, 2666
Scott	2659
Sherwood	2670
Sony	2667, 2668, 2672, 2673, 2674, 2680, 2684
Symphonic	2666

Appendix A

INSTALLING A RECEIVER INTO AN EXISTING SYSTEM

These instructions guide you through the installation of your new DishPro satellite receiver in an existing system where your satellite dish(es) has already been installed and pointed for the strongest possible signal. If your dish antenna(s) is not already installed, you will need to follow the *Installation Instructions* found in *Chapter 4*.

There are two families of satellite receivers that are covered by these installation instructions.

- DishPro Receivers which have the DishPro logo shown below.



- Legacy receivers which *do not* have the DishPro logo.

If you are installing a DishPro receiver into one of the dish antenna systems listed below, go to step 1 under Procedure to start your installation:

- DishPro receiver into a dish antenna system with DishPro LNBFs and switches.
- DishPro receiver into a dish antenna system with Legacy LNBFs and switches.

If you are installing a Legacy receiver into a dish antenna system with Legacy LNBFs and switches, complete the installation using the instructions which came with the Legacy receiver as well as instructions which came with the Legacy LNBFs and switches.

Important: If are trying to install a Legacy receiver (no DishPro logo) into an existing system with DishPro LNBFs and switches, you will need a DishPro Adapter. For more information on this, contact your DISH Network retailer or call 1-800-333-DISH (3474) for more information. They will give you the instructions for doing this installation with the DishPro Adapter.

INSTALLATION INSTRUCTIONS

1. Connect an RG-6 coaxial cable (see notes below) from the Satellite In port on the receiver's back panel to an available port on your switch or LNBF in your existing system. See Chapter 4 wiring diagrams for appropriate receiver connections in your system. See Grounding the System in Chapter 4 for detailed cabling instructions.

Note: If you are installing a DishPro receiver into a system with DishPro LNBFs (and/or switches), you can have as much as 200 feet of cable between the LNBF and the receiver. However, you must use only RG-6 coaxial cables rated for 950 to 2150 MHz. Some cables may say "Swept tested for 2150 MHz." If you have any doubt about this, ask your Dish retailer, or look on the container the cable came in. Do not use cable company TV cables or cables from other satellite TV systems not rated for 950-2150 MHz. These other cables may cause signal loss. Do not use existing cables such as RG-59. Also, be sure that any outdoor connections are made using waterproof F-connectors.

Note: If you are installing the DishPro receiver into a system with Legacy LNBFs and/or switches (that do not have a DishPro logo), you can have as much as 100 feet of cable between the LNBF and the receiver. However, you must use only RG-6 cable - do not use existing cables such as RG-59. Also, be sure that any outdoor connections are made using waterproof F-connectors.

Warning: Tighten all the coaxial cable connections only by hand. Using a wrench may over-tighten the connections, causing damage. Such damage is not covered by the Limited warranty.

2. Connect a coaxial cable from the TV Set Out connection on your receiver to your television's RF tuner input. Check to see that the Channel 3/4 switch on the new receiver's back panel is set to the same channel 3 or 4 as your TV.
3. Plug in the receiver's power cord. Make sure both the receiver and TV are turned on.
4. You should see the **Point Dish/Signal** menu in the new receiver. If you do not, open the **Main Menu**, by pressing Menu followed by 6-1-1 on the remote.
5. Select **Check Switch**. An Attention screen will open. Select **Check** to run Check Switch.
6. When Check Switch is complete, you will see an **Installation Summary** screen. If the screen shows the correct switch and the message "Satellite reception verified" for all satellites in your system, go to step 7. If not:
 - If the Installation Summary screen does not detect all of the satellites your system should be receiving:
 - a. Check and retighten (by hand) the cable connections between your receiver, LNBFs and switches in your system. Then press Retest to rerun Check Switch again. If this does not work, do step b below.

- b. If your receiver is connected to a DishPro LNB or switch, but the DishPro switch/LNB is not indicated in the Installation Summary screen and satellite signals are missing, press OK to return to the Point Dish/Signal screen and follow the instructions below under Alternate Installation Procedure for DishPro Systems below.
7. Select **OK** to return to the **Point Dish/Signal** screen. Then select **Cancel** to exit the **Point Dish/Signal** screen.
8. An **Attention** screen will open. This screen asks if the mounting and positioning of your dish is complete with a "Locked" indication in the **Point Dish/Signal** screen. Since your system is already installed and your dish is pointed for the strongest possible signal strength, you can select **Yes**.
9. The receiver will begin taking a software upgrade. You will see the message shown below.



A progress bar at the bottom of the screen will show how the software upgrade is progressing. Once the software upgrade is complete, you will see a second message that the receiver's memory is now being programmed.

This message may disappear, your screen may go blank for a few minutes, and the green light may continue to blink. This is normal and does not indicate a problem with the receiver.

10. When the software upgrade is complete, press View and you should now be able to watch TV programming. To activate your programming on this newly installed receiver, call 1-800-333-DISH (3474).

ALTERNATE INSTALLATION PROCEDURES FOR DISHPRO SYSTEMS

The following instructions are to be used to connect the receiver directly to a DishPro LNBF which allows the receiver to take a software upgrade from the satellite. After taking the software upgrade, the installation can be completed. This procedure assumes that you have already completed steps 1 through 6 from the preceding instructions.

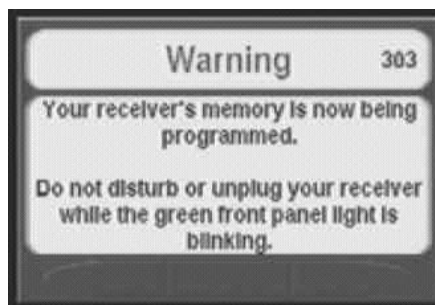
1. Connect an RG-6 coaxial cable from the Satellite In port on the receiver's back panel directly to any LNBF on a dish that has been installed and pointed for the strongest possible signal. Make sure there are no switches between the LNBF and the receiver (see "Grounding the System" on page 94 for detailed cabling instructions). You may want to use an in-line cable connector to bypass a switch. If your system is already connected this way, go to the next step.

2. You should see the **Point Dish/Signal** menu in the new receiver. If you do not, open the **Main Menu**, by pressing Menu followed by 6-1-1 on the remote.

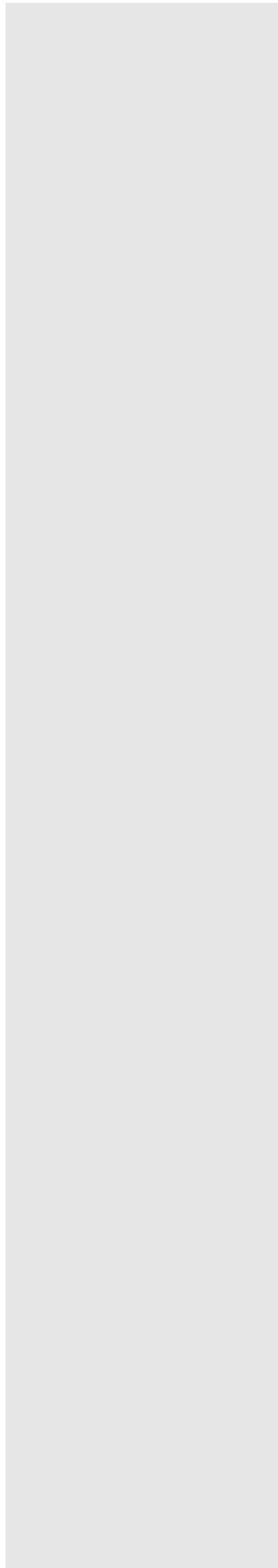
Note: Your receiver and TV should already be connected and powered on.

3. Look to make sure the number under **Transponder** is an odd number higher than 10 (for example, 11, 13, or 15) and you see a green signal strength bar. If you do not see an odd number higher than 10, move the highlight to the box under Transponder and use the Up or Down arrow on the remote to change the number until it is an odd number higher than 10 and you see a green signal strength bar. If you are unable to get a green signal strength bar:
 - a. If you see the message **Wrong Sat** and the signal strength bar is red, move the check mark in the **Point Dish/Signal** menu to the satellite location indicated below the bar and the bar should turn green.
 - b. If you do not see a signal strength bar on any odd transponder, temporarily shorten the cable between the LNBF and the receiver to 100 feet or less and then repeat step 3.
4. Once you have a green signal strength bar, press **Cancel** on the remote to exit the **Point Dish/Signal** screen.
5. An **Attention** screen will open. This screen asks if the mounting and positioning of your dish is complete with a **Locked** indication in the **Point Dish/Signal** screen. Since your system is already installed and your dish is pointed for the strongest possible signal strength, you can select **Yes**.

6. The receiver will begin taking a software upgrade. You will see the message shown below.



7. When the software upgrade is complete, you will need to go back to the **Point Dish/Signal** screen. To do this, open the **Main Menu** by pressing **Menu** and then **6-1-1** on the remote.
8. If you removed any switches in step #1, reconnect them now, and connect the Satellite In port on the receiver's back panel to any available receiver port on your switch. (See the wiring diagrams in Chapter 4 for more details.) If you shortened the cable between the LNBF and your receiver as requested in step 3.b, you can now reinstall cable that's up to 200 feet in length between the LNBF and the receiver.
9. Select **Check Switch**. An Attention screen will open. Select **Check** to run Check Switch.
10. A second **Attention** screen will open asking you to please wait while your switch installation is being checked.
11. When **Check Switch** is complete, you will see an **Installation Summary** screen. Make sure the screen shows the correct switch and the message "Satellite reception verified" for all satellites in your system.



Appendix B

LIMITED WARRANTY

ATTENTION!



This **Limited Warranty** is a legal document. Keep it in a safe place. Remember to retain your Bill of Sale for warranty service! Any items returned without a copy of the Proof of Purchase will be considered out of warranty.

WHAT THE WARRANTY COVERS

This warranty extends *only* to the original user of the equipment and is limited to the purchase price of each part. EchoStar Communications Corporation and its affiliated companies (“EchoStar”) warrant this system against defects in materials or workmanship as follows:

- **LABOR:** For a period of one (1) year from the original date of purchase, if EchoStar determines that the equipment is defective subject to the limitations of this warranty, it will be replaced at no charge for labor. EchoStar warrants any such work done against defects in materials or workmanship for the remaining portion of the original warranty period.
- **Parts:** For a period of one (1) year from the original date of purchase, EchoStar will supply, at no charge, new or re-manufactured parts in exchange for parts determined to be defective subject to the limitations of this warranty. EchoStar warrants any such replacement parts against defects in materials or workmanship for the remaining part of the original warranty period. **Note:** “Parts” means items included in this package, which may include the satellite dish assembly, receiver, LNBF, remote control, or dish mounting hardware. It does *not* include other parts purchased separately.

WHAT THE WARRANTY DOES NOT COVER

- This warranty *does not cover* replacement of lost or damaged Smart Cards.
- This warranty *does not cover* installation of the system. If applicable, such installation will be warranted under a separate installation agreement.
- This warranty *does not cover* consumer instruction, physical setup or adjustment of any consumer electronic devices, remote control batteries, signal reception problems, loss of use of the system, or unused programming charges due to system malfunction.
- This warranty *does not cover* cosmetic damage, damage due to lightning, electrical or telephone line surges, fire, flood, or other acts of Nature, accident, misuse, abuse, repair or alteration by other than authorized factory service, use of accessories not recommended by the receiver manufacturer, negligence, commercial or institutional use, or improper or neglected maintenance.
- This warranty *does not cover* equipment sold AS IS or WITH ALL FAULTS, **shipping and handling**, removal or reinstallation, shipping damage if the equipment was not packed and shipped in the manner prescribed, nor equipment purchased, serviced, or operated outside the continental United States of America.

LEGAL LIMITATIONS

REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS YOUR EXCLUSIVE REMEDY. ECHOSTAR SHALL NOT BE HELD LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESSED OR IMPLIED WARRANTY ON THIS SYSTEM, NOR FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF, OR INABILITY TO USE, THIS SYSTEM. UNDER NO CIRCUMSTANCES SHALL ECHOSTAR'S LIABILITY, IF ANY, EXCEED THE PURCHASE PRICE PAID FOR THIS SYSTEM. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS SYSTEM IS LIMITED IN DURATION TO THE PERIOD OF THIS WARRANTY. ECHOSTAR RESERVES THE RIGHT TO REFUSE TO HONOR THIS WARRANTY IF ECHOSTAR DETERMINES ANY OF THE ABOVE EXCEPTIONS TO HAVE CAUSED THIS SYSTEM NOT TO HAVE PERFORMED PROPERLY. THIS WARRANTY SHALL BE VOID IF ANY FACTORY-APPLIED IDENTIFICATION MARK, INCLUDING BUT NOT LIMITED TO SERIAL OR CONDITIONAL ACCESS NUMBERS, HAS BEEN ALTERED OR REMOVED. THIS WARRANTY SHALL ALSO BE VOID IF THE RECEIVER HAS BEEN OPENED BY AN UNAUTHORIZED PERSON.

IF YOU NEED ASSISTANCE

1. Call the Customer Service Center at 1-800-333-3474. Have the date of purchase and either your customer account number, the receiver conditional access number, or the receiver model number ready. Display the **Important System Information** menu to find these numbers.
2. A Customer Service Representative will assist you.
3. If the Representative determines you should return any equipment, you will be directed to call a Return Authorization representative. *Before shipping* any equipment, you *must* talk to a Return Authorization representative and *must* obtain a Return Authorization (RA) number.
4. You will be given the appropriate address for which to return your equipment. Whether under warranty or not, you will be responsible for the cost of shipping back the defective equipment. For faster service, see the *Advance Exchange Program* below.
5. Returned equipment must be packaged properly, using either the original shipping materials or the packaging in which the replacement equipment is shipped. Include a copy of the Bill of Sale. *Any items returned without a copy of the Proof of Purchase will be considered out of warranty.* Follow the instructions given to you by the Customer Service Representative.
6. Write the RA number in large, clearly visible characters on the outside of the shipping box that you use to return the equipment. *To avoid confusion and misunderstandings, shipments without an RA number clearly visible on the outside of the box will be returned to you at your expense.*
7. If you return the receiver, you *must* return the Smart Card with the receiver. If you do not return the Smart Card with the receiver, a fee will be assessed against your account.

ADVANCE EXCHANGE PROGRAM

The Advance Exchange Program allows you to have replacement equipment shipped immediately to you (depending upon where you live, it could take three to five business days). Along with replacement equipment, you will receive a pre-paid shipping label and instructions on how to return the defective equipment.

The shipping charge, for receiving replacement equipment and returning the defective equipment, is a one-time fee based on EchoStar's competitive bulk shipping rates (additional charges may apply outside of the continental US). This fee will be charged to your billing account or your valid credit card.

If you do not ship the defective equipment to EchoStar within ten days after receiving the replacement, your billing account or credit card will be charged the market price of the replacement. If you return the defective equipment *after* ten days, you will receive a full refund less an administrative fee.

If your equipment is out of warranty and can be repaired your billing account or credit card will be charged the standard repair fee for the replacement. If damage to the defective equipment is found, which EchoStar in its sole discretion determines has voided the warranty, or makes the equipment unrepairable, billing account or credit card will be charged the market price of the replacement.

POST RECEIPT EXCHANGE PROGRAM

You may choose to ship the equipment to us at your cost. To provide faster service, upon receipt of your equipment you will be shipped a replacement. Your original equipment will not be available for return.

The equipment you return will be checked to verify whether it is covered under this warranty. If the defective equipment is covered under this warranty, it will be replaced and shipped back to you at no additional cost (additional charges may apply outside of the continental US).

If your equipment is out of warranty and can be repaired your billing account or credit card will be charged the standard repair fee for the replacement. If damage to the defective equipment is found, which EchoStar in its sole discretion determines has voided the warranty, or makes the equipment unrepairable, your billing account or credit card will be charged the market price of the replacement.

RESIDENTIAL CUSTOMER AGREEMENT

Effective as of September 1, 2001 until replaced.

THIS DOCUMENT DESCRIBES THE TERMS AND CONDITIONS UNDER WHICH DISH NETWORK WILL PROVIDE ITS SERVICE TO YOU. IF YOU DO NOT ACCEPT THESE TERMS AND CONDITIONS, PLEASE NOTIFY US IMMEDIATELY AND WE WILL CANCEL YOUR SERVICE. IF YOU ARE A NEW DISH NETWORK CUSTOMER, YOUR ACTIVATION OF A DISH NETWORK ACCOUNT AND RECEIPT OF DISH NETWORK SERVICES SHALL CONSTITUTE YOUR ACCEPTANCE OF THIS AGREEMENT AND ITS TERMS AND CONDITIONS WILL BE LEGALLY BINDING UPON YOU.

IF YOU ARE AN EXISTING DISH NETWORK CUSTOMER, YOUR CONTINUED RECEIPT OF DISH NETWORK SERVICES FOLLOWING RECEIPT OR PUBLICATION BY DISH NETWORK ON ITS WEB SITE OF THIS AGREEMENT SHALL CONSTITUTE YOUR ACCEPTANCE OF ITS TERMS AND CONDITIONS, AND, ACCORDINGLY, THEY WILL BE LEGALLY BINDING ON YOU.

Thank you for choosing DISH Network for your television service provider. DISH Network is happy to answer any questions you may have and to provide you with technical and other customer support through the following toll-free number and email address:

1-800-333-DISH

feedback@echostar.com

or you may write to:

**DISH Network
Customer Service Center
P.O. Box 33577
Northglenn, CO 80233**

and, for general knowledge, try our website at **www.dishnetwork.com**.

“Dish Network” is a trademark of EchoStar Satellite Corporation.

1. THE DISH NETWORK SERVICE.

A. Services Defined. DISH Network offers a wide variety of video and audio programming and other services and we are constantly striving to add new services to our lineup. For purposes of this Agreement the term “Services” shall mean the programming available on DISH Network (whether subscription based or pay per view based) and any other services that we may provide to consumers either now or in the future. For purposes of this Agreement the terms “You” or “Your” refer to you, the DISH Network subscriber.

B. Programming Changes. Except as otherwise set forth in this Agreement, you may change your programming selection at any time by notifying us. A fee may apply to such changes (Change of Service Fee). In addition, you may be charged a fee (Service Access Fee) if you fail to subscribe to one of DISH Network’s basic programming packages which include America’s Top 50, America’s Top 100/CD, America’s Top 150, DISH Latino or DISH Latino Dos.

C. Programming Availability. Certain Services transmitted by us, including but not limited to some subscription Services, sporting events and broadcast network Services, may be blacked out in your area of reception. If you circumvent or attempt to circumvent any of these blackouts, you may be subject to legal action. You must be at least 18 years of age, or the applicable age of majority where you reside, in order to receive adult-oriented programming services.

D. Ordering Pay Per View. You may order DISH Network pay-per-view Services by using your on-screen Program Guide and remote control unit to select the movies and other events we offer. To order DISH Network pay-per-view Services, your DISH Network DBS digital receiver must be connected to a telephone outlet. You may also order DISH Network special events and pay-per-view Services over the telephone by calling the Customer Service Center or by using our automated system through the following toll free numbers:

1-877-778-MOVI (6684) for ordering movies

1-877-363-EVNT (3868) for ordering events

1-877-778-ADLT (2358) for ordering adult movies

A small fee will apply for use of the automated system (Pay-Per-View Automated Fee) or the Customer Service Center (Pay-Per-View Fee).

E. Private Viewing. DISH Network provides Services to you for your private home viewing, use and enjoyment. You agree that the Services provided will not be viewed outside of your private residence. You are permitted to exhibit the Services solely in your private residence and not in any other areas. The Services may not be rebroadcast, transmitted, recorded or performed, nor may admission be charged for listening to or viewing any Services provided by us. If we later determine that you utilized your DISH Network Equipment (including any additional DISH Network receivers) or sold, leased or otherwise gave possession of the same to a third party who you knew or reasonably should have known intended to use it to permit the viewing of the Services in a commercial establishment or any other area open to the public, we may terminate the Services and in addition to all other applicable fees, you agree to pay us the difference between the price actually paid for the Services and the full commercial rate for such Services, regardless of whether we have or had the commercial rights to such Services. The payment of that amount and/or the termination of Services shall not prejudice our ability to exercise any other rights and remedies we may have under this Agreement, at law, in equity, or otherwise.

F. Additional Receivers. To independently tune additional televisions within your home, a separate DISH Network receiver is required for each television. DISH Network will allow you to place up to five additional receivers on your account. Each additional receiver would be authorized to receive the same Services as your initial receiver. DISH Network will charge you a reduced monthly fee (Additional Receiver Authorization Fee) for each additional receiver added to your account. This option is only available if your initial DISH Network receiver and all additional receiver(s) are located at the same residence and are continuously connected to the same telephone line. If you desire to receive Services at two different locations, you must open a separate account for each location. You agree that you will not directly or indirectly use a single account for the purpose of authorizing Services for multiple DISH Network receivers that are not all located in the same residence and connected to the same phone line. If we later determine that you did, we may terminate your Services and, in addition to all other applicable fees, you agree to pay us the difference between the amounts actually received by us and the full retail price for the Services authorized for each DISH Network DBS receiver on the account, whether owned by you or not. The payment of that amount and/or the termination of Services shall not prejudice our ability to exercise any other rights and remedies we may have under this Agreement, at law, in equity, or otherwise.

G. Changes in Services offered. DISH Network reserves the right to change the Services that we offer, and our prices or fees related to such Services at any time. If the change affects you, we will provide you notice of the change and its effective date. The notice may be provided on your billing statement or by other communication permitted under Section 9B. In the event of a change in the contents of any programming, programming packages or other Services, you understand and agree that we have no obligation to replace or supplement the programming, programming packages or other Services previously offered that have been deleted, rearranged or otherwise changed. You further understand and agree you will not be entitled to any refund because of a change in the contents of any programming, programming packages, or other Services previously offered.

H. Multi-Month Subscriptions. For multi-month subscriptions, you may downgrade the Services only at the time of renewal. You may not downgrade the Services during the term of the multi-month subscription.

2. BILLING POLICIES AND PAYMENTS FOR SERVICES.

A. You agree to pay all amounts billed for Services and to pay all taxes, fees and other charges, if any, which are now or may in the future be assessed on the Services you receive from us. Unless you prepay for a multi-month subscription to Services, we will bill you each month, in advance, for Services ordered by you or anyone who uses your DISH Network Equipment, whether with or without your permission, until you cancel the Services. The bills you receive will show the total amount due, the payment due date, payments, credits, purchases and other charges to your account.

B. You agree to pay us in full monthly by the payment due date for the Services and for any other charges due us, including any fees set forth in this Section 2. Payment of your bill after the due date will result in you paying us a Late Payment Fee. Other fees and charges may also be assessed. If partial payments are made, they will be applied first to the oldest outstanding bill. If you send checks or money orders marked "payment in full," we can accept them without losing any of our rights to collect any other amounts owed by you, notwithstanding your characterization of the payment. DISH Network does not extend credit to our customers, and the Late Payment Fee is not interest, a credit service charge or a finance charge. You understand and agree that in the case of late payment or nonpayment for any Services ordered by you or for any of the charges stated below, we may report such late payment or nonpayment to credit reporting agencies. If you do not pay your bill by the due date, we have the right to disconnect your Services at any time thereafter, in our sole discretion. DISH Network may require you to pay all past due charges, a Reconnect Fee, a deposit equal to a minimum of one month's advance charges and all outstanding balances accrued through the date of deactivation, before we reconnect your Services. Deposits will not be held segregated from other funds and shall not earn or accrue interest.

C. If you at any time fail, neglect, or refuse to make timely payments hereunder, or if a petition in bankruptcy shall be filed on your behalf or against you, or if you take advantage of any insolvency law or become insolvent or make an assignment for the benefit of creditors, or if a receiver, liquidator, or trustee is appointed for your property or affairs, we shall be wholly relieved from our obligations hereunder.

D. If you paid for an annual or other multi-month subscription to any Services and your account is past due for any amounts owed to us, at our option we may suspend any or all Service until payment is received, and/or convert your annual or other multi-month subscription to a monthly subscription. If we convert your multi-month subscription to a monthly subscription, we will first apply the amount you paid for your multi-month subscription to any past due amounts and then any remaining amounts to future obligations. If we elect to offset the amount paid for the remaining portion of a multi-month subscription against amounts past due, you agree to pay, in addition to all other applicable fees, the Offset Fee set forth below for each month and partial month that the multi-month subscription was previously received.

E. If we use a collection agency or attorney to collect money you owe us or to assert any other right which we may have against you, you agree to pay the reasonable costs of collection or other action. These costs might include, but are not limited to, the costs of a collection agency, reasonable attorney's fees and court costs. If there are billing errors or other requests for credit, you can contact our Customer Service Center by telephone or in writing. You must contact us within sixty (60) days of the time you receive the billing statement for which you are seeking corrections. Failure to timely notify us of a dispute shall constitute acceptance of the bill. Undisputed portions of the billing statement must be paid before the next billing statement is issued to avoid an administrative fee for late payment. All payments for Services must be made directly by you to us. DISH Network shall have no obligation to provide Services for which payment is made by you to a third party.

F. In addition to the amounts due for Services, you agree to pay the fees referenced below ("Fees") when applicable. DISH Network reserves the right to increase these Fees or add additional Fees in the future, in our sole discretion.

Smart Card Replacement Fee	\$50.00
Additional Receiver Authorization Fee (monthly, per receiver)	\$4.99
Late Payment Fee	\$5.00
Change of Service Fee	\$5.00
Duplicate Billing Statement Fee	\$2.00
Overnight Delivery Fee	\$18.00
Restart Fee	\$25.00
Returned Payment Fee	\$25.00
Service Access Fee (monthly)	\$5.00
Offset Fee	\$2.00
Ledger Request Fee	\$5.00
Pay-Per-View Automated Fee	\$1.00
Pay-Per-View Fee	\$5.00

3. CANCELLATION OF SERVICE.

A. Your Service will continue until cancelled as provided for herein. Your subscription will be automatically renewed unless you contact us to cancel as provided for in the next paragraph.

B. You have the right to cancel your Service for any reason at any time by notifying us via telephone or in writing at the phone number or address set forth on page 1, above. Please be aware that certain promotional offers have a minimum subscription commitment (usually 12 months) and if you cancel your service prior to the expiration of that commitment, certain early termination fees may apply.

C. DISH Network has the right to terminate your Services at any time without providing notice to you if: (i) you fail to pay your bill when it is due; (ii) we receive confirmation that you have received the Services, or any part of the Services without paying for them; or (iii) you otherwise violate the terms of this Agreement.

D. If your Service is canceled for any reason, you are still responsible for payment of all outstanding balances accrued, including any applicable Fees.

E. You understand that charges for Services, once charged to your account, are nonrefundable. For monthly subscriptions, the cancellation will be effective at the end of the period covered by the last monthly bill. No refunds or credits will be provided in connection with the cancellation of monthly subscriptions. For annual or other multi-month subscriptions, the cancellation will be effective as of the date the multi-month subscription expires. Because you are receiving a discounted price in exchange for your agreement to pay for your services on an annual or other multi-month basis, in the event you cancel the Services prior to expiration of your multi-month subscription, you understand and agree that you are not entitled to any refund or credit for the unused portions of the multi-month subscription and that we have the right to retain any prepaid monies as liquidated damages.

4. EQUIPMENT.

A. In order to receive the Services it will be necessary for you to purchase or lease certain reception equipment consisting primarily of a DISH Network compatible satellite receiver, a satellite antenna, LNBF unit and remote control ("Equipment"). You will also be provided with a conditional access card ("Smart Card") that is inserted into your satellite receiver. The Smart Card remains the property of EchoStar Communications Corporation, the corporate parent of DISH Network and any tampering or other unauthorized modification to the Smart Card is strictly prohibited and may result in, and subject you to, legal action. You agree to return the Smart Card to us upon request.

B. Smart Cards are nontransferable. Your Smart Card will only work in the DISH Network receiver to which it was assigned by DISH Network. If you report to the Customer Service Center that your Smart Card was lost, damaged, defective or stolen we will replace it, as long as there is no evidence of unauthorized tampering or modification. A replacement fee will apply. In addition, in order to minimize downtime for your Equipment, DISH Network will, upon your request, deliver a replacement Smart Card to you via overnight delivery. Our Overnight Delivery Fee will apply.

C. DISH Network reserves the right to alter software in your DISH Network receiver, or provide content to PVR products, through periodic downloads. DISH Network will use commercially reasonable efforts to schedule these downloads in a manner that result in the least amount of interference with or interruption to your Service.

D. Your DISH Network receiver contains certain components and software which are proprietary to DISH Network. You agree that you will not try to reverse-engineer, decompile or disassemble any software or hardware contained within your receiver or our Smart Card. Such actions are strictly prohibited and may result in the termination of your Services and/or legal action.

E. For proper operation of your Equipment, DISH Network requires that you connect each DISH Network receiver on your account to a telephone line. For accounts containing multiple receivers, each receiver must be connected to the same telephone line.

F. If your DISH Network Equipment is stolen or otherwise removed from your premises without your authorization, you must notify our Customer Service Center immediately, but in any event not more than three (3) business days after such removal to avoid liability for payment for unauthorized use of the DISH Network Equipment. You will not be liable for unauthorized use after we have received your timely notification.

5. LEASED EQUIPMENT.

A. If you decide to lease your Equipment from DISH Network, such Equipment shall at all times remain the sole and exclusive property of DISH Network and we will have the right, at our discretion, to replace it with new or reconditioned equipment and to remove the equipment upon termination of Services. None of the equipment shall be deemed fixtures or part of your realty. Our ownership of the equipment may be displayed by notice contained on the equipment. You shall have no right to pledge, sell, mortgage, give away or remove, relocate, alter or tamper with the equipment (or any notice of our ownership thereon) at any time. Any reinstallation, return of or change in location of the equipment shall be performed by us at the service rates in effect at the time of service. You shall not attach any electrical or other devices to or otherwise alter the equipment without our prior written consent. DISH Network shall have the right to make such filings as are necessary to evidence our ownership rights in the equipment, and you agree to execute any and all documents as are necessary for us to make such filings. Upon termination of Services, you must notify our Customer Service Center to schedule the return the Equipment.

B. You shall notify us promptly of any defect in, damage to, or accident involving the equipment. All maintenance and repair of the equipment shall be performed by us or our designees. DISH Network may charge you for any repairs that are necessitated by any damage to, or misuse of, the Equipment.

6. TRANSFER OF ACCOUNT, SERVICES OR EQUIPMENT.

DISH Network may sell, assign or transfer your account to a third party without notice to you. You may not assign or transfer your Services without our written consent which will not be unreasonably withheld. We may, however, refuse to allow you to assign or transfer your Services if you lease your Equipment or if your account has an outstanding balance.

7. LIMITATION OF OUR LIABILITY.

A. WE WILL NOT BE LIABLE FOR ANY INTERRUPTIONS IN SERVICE OR LIABLE FOR ANY DELAY OR FAILURE TO PERFORM, IF SUCH DELAY OR NONPERFORMANCE ARISES IN CONNECTION WITH THE TERMINATION OF ALL OR A PORTION OF THE SERVICES, THE RELOCATION OF ALL OR A PORTION OF THE SERVICES TO DIFFERENT SATELLITE(S), A CHANGE IN THE FEATURES AVAILABLE WITH YOUR DISH NETWORK DBS EQUIPMENT OR ANY ACTS OF GOD, FIRES, EARTHQUAKES, FLOODS, POWER OR TECHNICAL FAILURE, ACTS OF ANY GOVERNMENTAL BODY OR ANY OTHER CAUSE BEYOND OUR CONTROL. WE WILL NOT BE LIABLE FOR ANY DAMAGE RESULTING FROM LOSS OF RECORDED MATERIAL OR THE PREVENTION OF RECORDING DUE TO ANY FAULT, FAILURE, DEFICIENCY OR DEFECT IN SERVICES OR EQUIPMENT. WE MAKE NO WARRANTY, EITHER EXPRESSED OR IMPLIED, REGARDING THE DISH NETWORK DBS EQUIPMENT OR ANY SERVICES FURNISHED TO YOU. ALL SUCH WARRANTIES ARE EXPRESSLY EXCLUDED. IN NO EVENT SHALL WE HAVE ANY LIABILITY FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES RELATING TO THE DBS EQUIPMENT OR RESULTING FROM OUR FURNISHING OR FAILURE TO FURNISH ANY SERVICES OR EQUIPMENT TO YOU, OR FROM ANY FAULT, FAILURE, DEFICIENCY OR DEFECT IN SERVICES OR EQUIPMENT FURNISHED TO YOU.

B. It is your responsibility to impose any restrictions on viewing by you, other members of your household, or guests, and we shall have no liability to anyone due to or based on the content of any of the Services furnished to you.

8. WARNING AGAINST PIRACY.

It is a violation of several U.S. federal and state laws to receive any Services, or any portion of such Services, without paying for them. The penalties for violating such laws can range from imprisonment to civil damage awards of up to \$110,000 per violation.

9. MISCELLANEOUS.

A. Physical Address/Change of Address. When setting up your DISH Network account, you agree to provide us with the physical street address where the Equipment will be located. A post office box does not constitute a physical address and is not sufficient to meet this requirement. You agree to give us prompt notice of your change of name, mailing address, physical address where the Equipment is located or telephone number. You may do this by notifying our Customer Service Center by telephone or in writing.

B. Notice. If we send you notice, it will be considered given when deposited in the U.S. Mail, addressed to you at your billing address or hand-delivered to you. Our notice to you will also be effective if provided on your billing statement or by telephone. If you give notice to us, it will be deemed given when received by us at the address listed on the first page of this Agreement.

C. Applicable Law. This Agreement, including all matters relating to its validity, construction, performance and enforcement, shall be governed by applicable federal law, the rules and regulations of the Federal Communications Commission, and the laws and regulations of the state and local area where Service is provided. These terms and conditions are subject to amendment, modification or termination if required by such regulations or laws. If any provision in this Agreement is declared to be illegal or in conflict with any law or regulation, that provision may be deleted or modified, without affecting the validity of the other provisions.

D. Other. This document contains the entire agreement between DISH Network and you, the customer, and no salesperson, installer, customer service representative, authorized retailer, or other similarly situated individual is authorized to change the terms set forth herein. DISH Network may, however, change the terms and conditions of this Agreement in the future and will notify you if that occurs. The terms of this Agreement, which either are expressly stated to survive or by their nature would logically be expected to survive termination, shall continue thereafter until fully performed.

STAYING LEGAL

Title 47, Section 605(e)4, United States Code (U.S.C.) makes it a federal crime to modify this receiver to enable it to receive encrypted (scrambled) television programming without payment of required subscriptions. Conviction can result in a fine of up to \$500,000 and imprisonment for five years, or both. Any owner of this receiver who procures or willfully causes its modification is an accessory to that offense and may be punishable in the same manner. Investigative authority for violations lies with the Federal Bureau of Investigation (FBI).

This product may incorporate copyright protection technology that is protected by U.S. patents and other intellectual property rights. Use of such copyright protection technology must be authorized by Macrovision, and is intended for home and other limited pay-per-view uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.

FCC COMPLIANCE

Telephone Communication



The following text is extracted from Federal Communications Commission (FCC) regulations, as of the publication date of this *Guide*. Contact the FCC (see following) or your library for the complete text of the regulations.

This equipment complies with Part 68 of the FCC rules. On the rear panel of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company. See the inside of the back cover of this guide for the REN of this equipment.

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). The receiver does not affect the sum of RENs. To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

This equipment uses the following Universal Service Order Code (USOC) jacks: RJ-11C.

An FCC compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68 compliant.

This equipment cannot be used on telephone company-provided coin service. Connection to Party Line Service is subject to state tariffs.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If you experience trouble with this equipment, please contact Customer Service at 1-800-333-3474 for repair and warranty information. If the trouble is causing harm to the telephone network, the telephone company may request you remove the equipment from the network until the problem is resolved.



WARNING! Do *not* attempt to open the receiver, as this will void the warranty. There is risk of electrical shock, which may result in damage to the equipment, or personal injury or death. There are no user-serviceable parts inside the receiver. Unauthorized modification will void the warranty.

This equipment is hearing-aid compatible.

It is recommended that the customer install an AC surge arrester in the AC outlet to which this device is connected. This is to avoid damage to the equipment caused by local lightning strikes and other electrical surges.

RADIO INTERFERENCE

The receiver complies with the limits for a Class B digital device, as specified in Part 15 of the FCC Rules. This compliance helps ensure against radio interference with other equipment in a typical residential location. Except for the telephone cable, you are required to use shielded cables and cords, such as coaxial and communication cables, to maintain FCC compliance.

The receiver does use radio frequencies during operation. If you do not install or use the receiver properly, radio energy may be generated that can interfere with radio communications. Also, it is possible that radio interference can occur even in a proper installation. The typical symptom of radio interference is distortion of television or radio reception. You can determine if the receiver is the cause by confirming that the interference stops if you unplug the receiver from the power outlet, and the interference returns when you plug the receiver back into the outlet.

The customer may perform minor adjustments such as the following, in case of problems with the equipment.

Move or realign the antenna or receiving device, such as your broadcast TV antenna.

Increase the distance between the receiver and the equipment with the interference. Change the angle of the receiver relative to the equipment.

Plug the receiver into a different power outlet, preferably on a different fuse circuit within your building.

Refer to *Troubleshooting* on page 99 for a detailed description of recommended customer actions.

If none of the remedies on the previous page stops the radio interference, you should contact a licensed radio/television technician, your satellite dealer, or call the Customer Service Center at 1-800-333-3474, for assistance.

In addition, the FCC provides a booklet that can help you. You can order the booklet from the following address:

FCC Consumer Facts Sheet: Interference
FCC Communications Commission
Consumer and Governmental Affairs Bureau
445 12th St.
Washington D.C. 20554
1-888-225-5322

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Write the following information in the spaces provided below. You may need to provide this information if you call the Service Center. To get the Conditional Access Numbers, display the **Important System Information** menu (see *Ordering Your Program Packages on page 2*).

Purchase Location Name:	
Purchase Location Telephone Number:	
Receiver Serial Number:	
Receiver Conditional Access Number	
Smart Card Conditional Access Number:	
FCC Ringer Equivalence Number (REN):	0.0B

Codes Programmed into Remote Control	
Remote Address (SAT Mode)	
Television Code (TV Mode)	
VCR Code (VCR Mode)	
Auxiliary Code (AUX Mode)	

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